CIIL Phonetic Reader Series-17

BALTI
PHONETIC READER

K. RANGAN

CENTRAL INSTITUTE OF INDIAN LANGUAGES
MYSORE-570006

Balti Phonetic Reader

CENTRAL INSTITUTE OF INDIAN LANGUAGES

PHONETIC READER SERIES–17

Editor

E. ANNAMALAI

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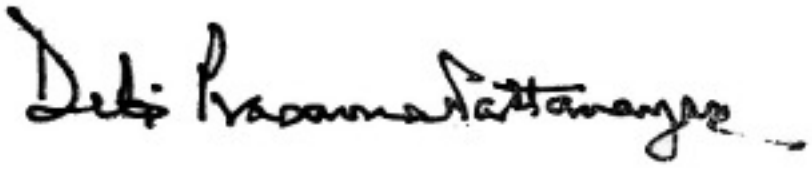
FOREWORD

The Central Institute of Indian Languages was set up on the 17th July, 1969 with a view to assisting and co-ordinating the development of Indian languages. The Institute was charged with the responsibility of serving as a nucleus to bring together all the research and literary out-put from the various linguistic streams to a common head and narrowing the gap between basic research and developmental research in the fields of languages and linguistics in India.

The Institute and its four Regional Language Centres are thus engaged in research and teaching which lead to the publication of a wide-ranging variety of materials. Preparation of materials designed for teaching/learning at different levels and suited to specific needs is one of the major areas of interest of the Institute. Basic research relating to the acquisition of language and study of language in its manifold psycho-social relations constitute another broad range of its interest. The publications will include materials produced by the members of the staff of the Central Institute of Indian Languages and its Regional Language Centres and associated scholars from universities and institutions, both Indian and foreign.

The Central Institute of Indian languages has initiated the *Phonetic Reader Series* in Indian languages with a veiw to presenting the range of phonetic variation obtaining in this sub-continent and demonstrating the closeness of languages on the basis of phonetic patterning. These Readers are biased towards learning the sound systems of languages. Thus it is hoped that this series will be of interest to both scholars who are interested in phonetic studies and practical learners of languages who wish to make a beginning in their language study.

If these materials help solving the problems in the State and help in understanding the people speaking the language, then our efforts will have been amply rewarded.



PREFACE

There are many non-scheduled languages in India, which are not tribal. However, some of the problems of these non-scheduled languages are similar to those of the tribals. They are minority speakers and the communication between them and the speakers of the majority language has not been bidirectional. Many of them live in isolated areas near the borders.

Most of these non-scheduled languages do not have a script of their own. The children find the school uninteresting and meaningless because of the language barrier. The illiteracy rate is generally high and so the people cannot be reached and pulled out of their isolation to participate in and benefit from the economic and social reconstruction of the country. Hence the need for the development of instructional materials in these languages is similar to that of the tribal languages. It is also necessary to provide materials for the speakers of the majority language interested in learning the minority language for the purposes of business, official duty, social service, etc. For these ultimate purposes, the Central Institute of Indian Languages prepares a package of grammar, multilingual dictionary, phonetic reader, primers and teaching manual in the non-scheduled languages in the border areas as in the tribal languages.

The Phonetic Reader gives a general description of the human speech sounds and the organs of speech that produce them, a detailed description of the production of the sounds of the particular language, drills to practice those sounds, the phonemic inventory and an orthography best suited for that language. The general description of the human speech sounds introduces and explains the technical terminology. The description of the sounds of the language under consideration is made lucid enough for the person not trained

in linguistics to understand even, perhaps, at the risk of being repetitive at times. After describing how each sound is produced, the technical name of the sound is given for identification and its destribution in a word. This is followed, wherever possible, by a comparison with the similar sound in other languages assumed to be known to the prospective users of the book. Then comes the list of words containing the sound. This section will help the reader to identify the sounds of the language he is learning and to reproduce them in isolation and in words. Word for drill are given for the learner to practice correct pronunciation and to differentiate between similar sounds.

The script suggested is normally the script of the majority or the official language of the region. This is to take the barrier of script out for the learner from the majority group and more importantly to ease the switch over for the minority children from their mother tongue to the majority or the official language at some point in their schooling. This will also make biliterate (i.e. able to read and write two languages) the minority language adults who can already speak the majority or the official language, when they are taught reading and writing of their mother-tongue. The modifications given are only suggestive and they take into consideration the conventions of the adopted script, the practices already in vogue if the script is being used by the language under analysis and the technological convenience. Besides suggesting the adoption of the script of the majority or the official language the way to write the language under analysis in Devanagari script is also indicated for the interested persons.

Though the Phonetic Reader is primarily aimed at the language learner and teacher, it is hoped that it will be also useful to linguists interested in typology and universals. The section on script will be of interest to language planners

Execpt when the writer is the native speaker of the language analysed, data are collected in the field primarily from one informant and then checked with a few other informants. Care is taken to transcribe the sounds as

accurately as possible. Still some inadvertant lapses might remain. There might still be room for improving the presentation of the material. Comments and suggestions passed on to us will be useful to improve our future publications in the series.

E. ANNAMALAI

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The materials presented for the description and analysis of Balti language were primarily collected from the speech of Mr. Abdul Hamid Tanveer B. A., B. Ed., Kargil during my field work in 1971-72. The data collected were compared and checked with the speech of Mr. Kachoo. Habibullah Khan and Mr. Mohammed Ali Wazir B. Sc.

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K. RANGAN

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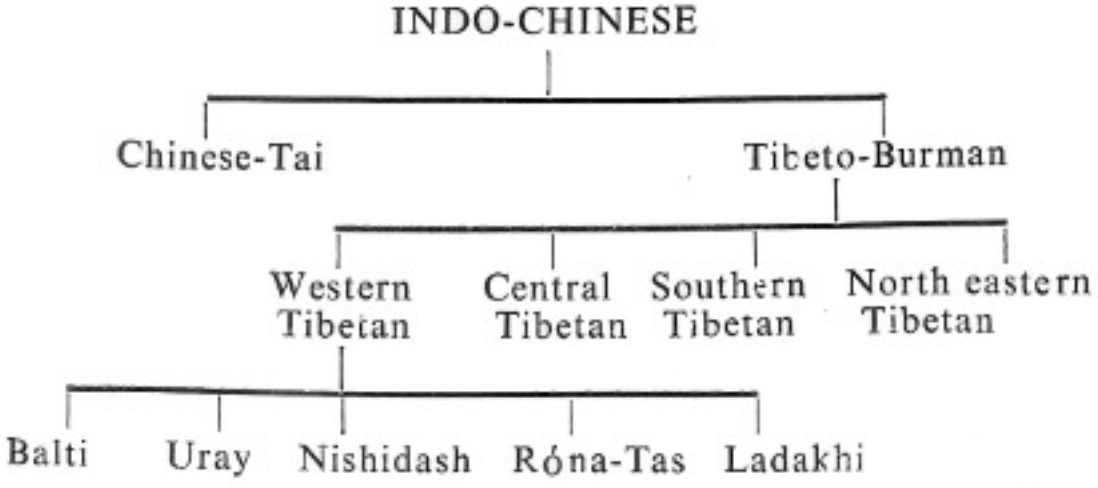
INTRODUCTION

1.1. Family of Languages

There are four major families of languages in India, viz., Indo-Aryan, Dravidian, Austro-Asiatic and Tibeto-Burman. The languages spoken in Ladakh district belong to the Tibeto-Burman family of languages and the Indo-Aryan. Balti belongs to the former.

1.1.1. Tibeto-Burman Family

The languages of the Tibeto-Burman family are spoken in Tibet in the north and extend upto Burma in the south. Starting from Baltistan in the west they extend to the Chinese provinces in the east. They belong to the larger family of Indo-Chinese. Indo-Chinese covers the Chinese-Tai and the Burman family of languages. Tibeto-Burman is further subdivided into Western Tibetan, Central Tibetan, Southern Tibetan and North eastern Tibetan. The following geneological tree shows the plece of Balti in the Tibeto-Burman family.



1.1.2. Some Features of Tibeto-Burman Family

The languages of the Tibeto-Burman family differ from

the languages of the Chinese-Tai in certain respects. Unlike the languages of Chinese and Tai which have Subject-Verb-Object (SVO) word order, the languages of the Tibeto-Burman family have the Subject-Object-Verb (SOV) word order. Another significant feature that should be pointed out is the extensive use of auxiliary words in Tibeto-Burman in order to connect the words of a sentence and to explain their mutual relationship.

1.2. Geographical Distribution

The dialect under analysis is spoken in the Ladakh district of Jammu and Kashmir. A major area where Balti is spoken lies in Pakistan which cuts across the international border. The area where Balti is spoken by a mojority is called Baltistan. In the Ladakh district, Kargil tehsil is the area where the Balti speakers are concentrated. Balti area starts from Zojila pass and extends upto Bhod-Kharbu, a village on the highway from Srinagar to Leh.[2]

Balti is surrounded by the speakers of the Shina language and the Brokskat language. These two languges belong to the Indo-Aryan family. Most of the speakers of Shina and Brokskat languages are bilinguals in Balti. They use Shina and Brokskat in their respective villages and Balti when visiting Kargil for business and official purposes. Balti speakers have contact with Ladakhi speakers also. Ladakhi, another Tibeto-Burman language of the district, is the majority language of the district spoken by 60% of the total population.

Balti is the major language in the following villages of the Ladakh district :

1. Kargil 2. Minji 3. Tripson 4. Salaskote
5. Lankerchai 6. Farona 7. Sankoo 8. Panikhar
9. Namsoo 10. Tehsuru 11. Khawas 12. Achambur
13. Parkachik 14. Jhoskor 15. Tambis 16. Kanoor
17. Safi 18. Batambis 19. Umba 20. Pushkum
21. Akchamal 22. Soath 23. Barchai 24. Apati
25. Yurbaltak 26. Shakar 27. Chicktan 28. Haqnis
29. Lamsu 30. Sando 31. Stakchi 32. Khangral
33. Sanjuq 34. Hartaass.

In the following villages, Shina is the major language. Balti comes second.

1. Jhanigund 2. Kharboo 3. Shumsha 4. Thangskam 5. Thanthal Thang 6. Bembat 7. Stakboo 8. Goshen 9 Muratbag 10. Pandrass 11. Karkit 12. Karkit Jhoo 13. Kaksar.

Kashmiri and Balti are spoken in discending order in the following villages 1. Matain 2. Nilgrat 3. Qull

Balti and Brokskat are spoken in the following villages :

1. Zhilmoo 2. Darzhiks 3. Garkoon 4. Batalick 5. Tha 6. Hanoo 7. Sharchai.

Villages where Ladakhi and Balti are spoken are :

1. Jhoshoat 2. Nubra 3. Buqthang 4. Turtur [4] 5. Chulunka[4].

1.3. Background of the People

The second major language spoken in the Ladakh district is Balti. This language is spoken by 33% of the total population of the Ladakh district.[5] The Balti people, though they are Tibetans, have mixed racially with the Dards to a great extend. They have embraced Islam. Thus the people who speak Ladakhi are Buddhists and these who speak Balti are Muslims. It is said locally that all the people of the Ladakh district were once Buddhists and that during Muslim rule people were converted to Islam. Their main occupation is agriculture.

1. 4. Earlier Works

Though there are many articles dealing with the Tibeto Burman languages in general, no descriptive grammar which describes the structure of Balti language in detail is avai.able. This Reader is the first in its kind which gives a detailed description of Balti sounds and its phonemes with distribution. A descriptive gammar of Balti is to follow this Reader. Grierson (1971-21) refers to Austen, H. H. Godwin's 'A Vocabulary of English, Balti and Kashmir' (The Journal of the Asiatic Society of Bengal, Vol, XXXV, part 1, 1880. pp 233) only. Except this list of vocabulary no work of grammar is available regarding Balti.

1. 5. Organisation of the Reader

Chapter 2, which follows the introduction gives a short and general introduction to the speech organs and sounds. Most of the examples are drawn from English and Urdu. The Urdu examples are given in transliteration. English examples are given in the traditional spelling. For pronunciation we follow the Advanced Learner's Dictionary of English. In chapter 3, the sounds of Balti are described in detail and their occurrences are also given. In order to pronounce the sounds accurately and perceive them distinctly, phonetic exercises are given in chapter 4. Chapter 5, deals with the phonetic inventory of Balti and the next chapter discusses the introduction of Devanagari and Urdu script for writing Balti.

NOTES

1. The languages of Indo-Aryan and Dravidian also have this same word order i.e., subject-object-verb (SOV) order.

2. The particular dialect under analysis is called *Purki* in Grierson (1971: 42–50). Grierson says that Purkı, according to the conception of Ladakhis extends from the zoji pass to Bod Khorbu and that it is closely related to Balti and Ladakhi and it can best be treated as the connecting link between the two. We, however, treat Purki as a dialect of Balti. This name is derived from the name of the place, Purik. Historicallv this region was in Ladakh and then it was transferred to Baltistan after the Dogra war, 1834–42. After 1947, this region forms a part of the Ladakh district which is in Jammu and Kashmir state.

3. *Jh* is pronounced as voiceless palatal affricate (č)

4. These two villages were under Pakistan before the 1971 war. After the war, these villages have come under the Indian administration.

5. According to 1961 census, the total number of Balti speakers are 33,459 + 112 (in. U.P.). According to 1971 census, there are 40,136 Balti speakers.

2. SPEECH ORGANS AND SOUNDS

2. 1. The Nature of Language

The primary function of language is communication. The people in a society perform the function of communication by making use of vocal symbols. Language is therefore defined as a system of vocal symbols by means of which a society co-operates (Bloch and Trager (1942: 5)). Before we analyse the system of sounds of Balti, we shall give a brief description of speech sounds in general and the speech organs which produce them.

2. 2. Description of Speech Organs

The following diagram locates the various speech organs. In this Phonetic Reader, we describe the Balti sounds in terms of the various movements of these speech organs.

2. 3. Explanation

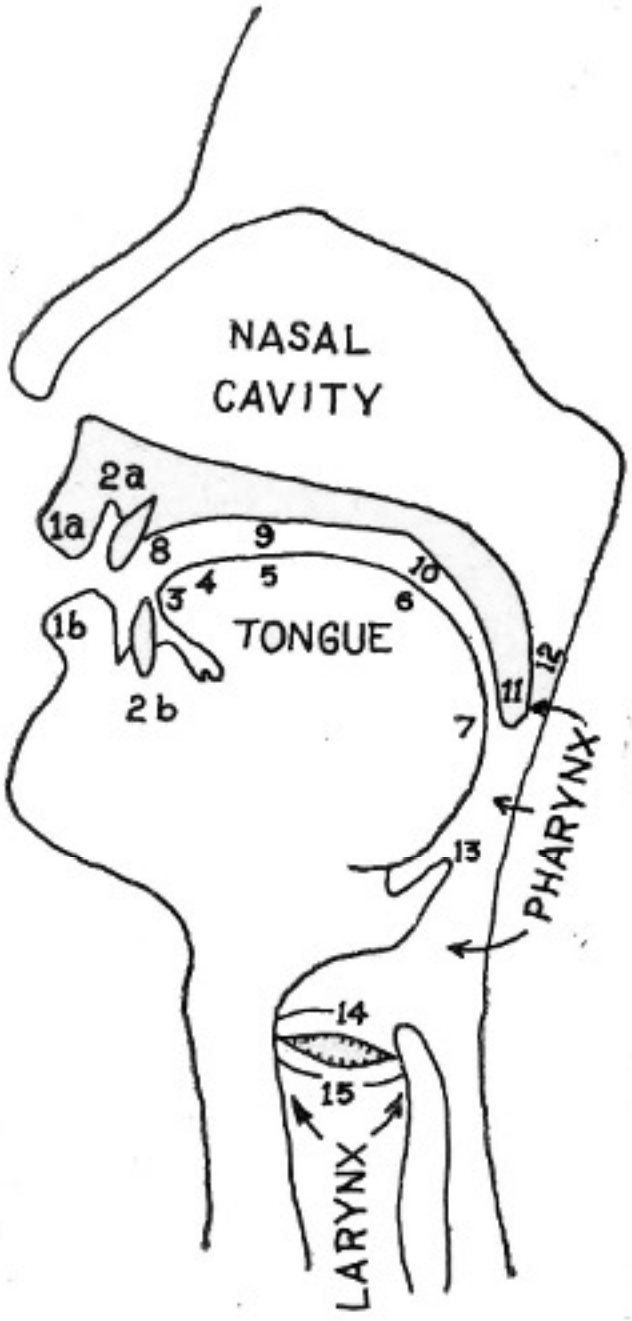
The organs involved in the production of speech can be divided into three groups namely (i) respiratory system; (ii) phonatory system and (iii) articulatory system. Respiratory system includes the lungs, the muscles that expand and compress them, the bronchial tubes and the windpipe or trachea. Larynx is at the top of windpipe. Phonatory system consists of larynx which contains the vocal cords. The articulatory system includes the nose, the mouth, the tongue, the teeth and the lips.

2.3.1. The lungs are called the *initiator* because they are the apparatus for setting up the airstream. *Pulmonic* is the technical term used for the sounds produced with the lungs as the initiator.

We shall introduce here two other technical terms that are closely connected with the function of lungs. The term

egressive is used for the sounds in whose production the air is pushed out and the term *ingressive* is used for the sounds in whose production the airstream is sucked in.

1a Upper lip
1b Lower lip
2a Upper teeth
2b Lower teeth
3 Tip of the tongue
4 Blade of the tongue
5 Center of the tongue (also called middle)
6 Back of the tongue (also called middle)
7 Root of the tongue
8 Alveolum (also called teeth ridge)
9 Hard palate
10 Soft palate (also called velum)
11 Uvula
12 Velic
13 Epiglottis
14 Glottis
15 Vocal cords



SAGITTAL SECTION OF SPEECH TRACT

2.3.2. The air from the lungs passes through the windpipe before it reaches the oral or nasal cavity. As we mentioned, larynx is at the top of windpipe. The vocal cords in the larynx play an important part in producing the *voiced* and *voiceless* sounds. The vocal cords are a pair of liplike muscles placed

horizontally in the larynx from the front to the back. They are joined in the front but are separate at the back. They can be either brought together or moved apart. The space between the vocal cords is the *glottis*. To produce the voice less sounds, the vocal cords are held apart and the glottis is open while the air passes through the larynx. The sounds mentioned in the following words of English and Urdu are voiceless. *p* in *speak* ; *t* in *tin* ; *k* in *sky* ; *p* in *pa:ni:* ' water '; *t* in *ta:la:b* ' watertank '; *k* in *ka:m* 'work '; *s* in *sa:ma:n* ' thing '.

2.3.3. To produce the voiced sounds the vocal cords are brought sufficiently close together but not held firmly. The air stream from the lungs separates the vocal cords while pushing through them. As soon as air passes through the glottis, the vocal cords, being elastic, come together again. Another puff of opens up the glottis again Thus the vocal cords vibrate many times in a second when the airstream passes through the glottis in a series of small puffs. This produces voicing. The initial sounds in the following words of English and Urdu are voiced : *b* in *boy*; *d* in *danger*; *g* in *girl*; *b* in *ba p* ' father '; *d* in *da: m* 'price', y in *garmi*: 'heat',

2.3.4. The organs in the oral cavity can be divided into two kinds : (i) *Articulators*, the organs which can be more or less moved front and back, raised law and high and thus made to assume a variety of positions, and (ii) *points of Articulations*, the various fixed points or areas lying above the articulators.

2 4. Points of Articulation

The upper part of the oral cavity which lies above the various parts of the tongue can be divided into many points which articutators touch or approach in order to produce various speech sounds. The upper lip and the upper teeth are also the points of articulation. The hard convex surface just behind the upper teeth is called the teeth ridge. The hard concave arch just behind the teeth ridge is the *hard palate*. The flexible part at the back that can be raised or lowered is called

the *soft-palate* or *velum* and the *uvula* hangs at the end of soft palate.

2.5. Articulators

2.5.1 The articulators include the lower lip and the various parts of the tongue. The lower lip functions as an articulator by obstructing the airstream that flows through the oral cavity. The airstream can be obstructed at two points. The lower lip may obstruct completely the airflow at the oral cavity by pressing against the upper lip. The sounds *p* in *pen*, *m* in *mother* and *b* in *bell* of English and *p* in *pa:ni:* '*water*'; *m* in *me:ra:* 'my'; *b* in *ba:ris* 'rain' of Urdu are produced with this closure. The sounds thus produced are called *Bilabial*. The sounds which are called *Libiodental* are produced when the lower lip is pressed against the upper teeth to obstruct the airstream in the oral cavity. The following sounds of English and Urdu can be given as examples for this class of sounds : *f* in *fan* and v in van; *f* in *fursat* '*leisure*'.

2.5.2. The tongue plays a vital role in the production of speech sounds. It is so mobile that its various parts ca be moved up and down and back and forth. The tongue can be divided into five parts. (i) *Tip of the tongue;* (ii) *Blade of the tongue*; (iii) *Front of the tongue;* (iv) *Back of the tongue and* (V) *Root of the tongue*. *Apex* is the technical term used to refer to the tip and blade of the tongue together. The apex may form a complete closure of the oral passage by pressing against the edge of the upper teeth or alveolar region. Against the same points of articulation, the apex may not close completely and leave a slit-shaped and grove shaped. Opening sounds thus produced with the apex are *Apicodental* or *Apicoalveolar* depending upon the point it touches. In English, we have sounds like *th* in *thin*, *s* in *seal*, *z* in *zeal*, *t* in *wit* and *n* in *nasal*. Urdu also has sounds like *s* in *so:na:* 'gold', *z* in *zard* 'yellow'; *t* in *tu:ta:* 'to break'; *n* in *naram* 'soft'.

2.5.3. The broad surface of the tongue can be divided into

two parts. *Front* is the term used for that part of the tongue which lies immediately behind the blade and extends for about one and half inches. This portion can obstruct the airstream completely by touching the hard palate or partially by leaving a slit-shaped opening. The sounds thus produced are called *Frontopalatal* or simply *Palatal* e.g. *ch* in *church* and *chilly*; *J* in *jump* and *joke*.

2 5.4. The *Back* or *Dorsum* of the tongue is the portion that extends from a point about one and half inches from the blade to the extreme rear of the oral cavity. The part of the roof which lies above the back of the tongue is the *Soft palate* or *Velum*. The back of the tongue may form a complete closure of the mouth passage by raising and blocking the airstream against the soft palate or may form a partial closure by raising towards the soft palate but not touching it. The sounds produced in this way are called *Dorsovelar* or simply *Velar* sounds. *k* in *sky*, *g* in *game* and *ng* in *sing* of English and *k* in *kamar* 'waist'; *g* in *gul* 'flower' of Urdu belong to this class of sounds.

The above description gives the articulators and points of articulation involved in the production of speech sounds. There is another dimension to speech production which is the manner of articulation. It defines how the airstream is obstructed in various ways like complete stopping, squeezing, releasing through only a part of the oral cavity or through nasal cavity ect. at various paints by various articulators. The speech sounds are classified on the basis of these three factors.

2 6. Manner of Articulation

The sounds of a language can be broadly classified into two on the basis of manner of articulation; (i) *Vowels* and (ii) *Consonants*. While producing the vowel sounds, the air from the lungs passing through the oral cavity is not obstructed anywhere. The oral cavity assumes different shapes, technically called resonace chambers, by the movement of the articulators to produce the different vowel sounds. The vow-

els are commonly voiced. On the contrary when a consonant sound is produced, the airflow passing through the oral passage is obstructed in various ways by the articulators. Both voiced and voiceless consonants are common. The demarcating line is not very sharp. Some sounds called semivowels have the characteristics of vowels in some respects and the characteristics of consonants in some other respects.

2.6.1. Vowels

While describing the vowel sounds, the part of the tongue involved, the height of the tongue and the position of the lips must be taken into consideration. On the basis of these criteria, the vowels are classified into FRONT, BACK and CENTRAL vowels.

The front vowels are produced by raising the front of the tongue to varying points of height towards the hard palate. Vowels *i* in *ignore*, *e* in *error* and *a* in *man* of English and *i* in *izat* 'respect'; and *e:* in *e:k* 'one', of Urdu are called front vowels. When the back of the tongue is raised towards the soft palate, the back vowels are produced *u* in *put*, *o* in *order*, of English and *u:* in *u:n* 'wool' and *o:* in *o:r* 'and' of Urdu are back vowels. To produce central vowels, the central part of the tongue (overlapping the front and the back) approaches the mid part of the roof of the mouth (overlapping the hard palate and the soft palate). The vowel in the first syllable of the following words of English is a central vowel: *Command*, *commit*, etc. The vowels are classified not only on the basis of the part of the tongue involved in the articulation but also on the basis of height to which the tongue is raisd. Depending on the height of the tongue, the vowels are classified into *high*, *low* and *mid* vowels. The front vowel may be high or low or mid. So may be the back vowel and central vowel. The mid height may be further divided into highermid and lowermid.

The description of vowels will not be complete unless we mention the role played by the lips. The features *rounded* and *unrounded* are given to vowels on the basis of the position of lips. The vowels are unrounded if the lips are spread i.e., they are in neutral position. All the front, back and central vowels

can be produced either with rounding lips or spread lips. The vowels *i* in *infant*, *e* in *envelope* in English are front unrounded vowels. *u* in *put* and *o* in *board* are back rounded vowels in English. Commonly the front vowels are unrounded and the back vowels are rounded. There are languages which have front vowels which are rounded and back vowels which are unrounded.

We have languages in which we find vowels and consonants which are short and long. As far as the articulation is concerned, there is no difference between a short and long vowel. The only difference that we observe is the duration of time. For long vowels, the duration of time is more than for the corresponding short vowels. The vowels *i* in *lik* 'write', *a* in *ab* 'now' and *u* in *kul* 'total' are short and *i* in *ki:l* 'nail' *a:b* 'water' and *u:* in *bhu:l* 'mistake' are long in Urdu.

2. 6. 2. Consonants

2.6.2.1. The consonants may be classified into five major classes based on their manner of articulation. To produce the *stops*, the airstream in the oral cavity is completely stopped by closing the passage at some point. Sounds like *p*, t, *t* and *k* are stops. *p* in *pass*, t in *cut* and *k* in *sky* of English and *p* in *ta:pna:* 'to heat' t in *bu:t* 'shoes' and *k* in k*arna*: 'to do' of Urdu belong to this class.

2.6.2.2. When the airstream is not completely blocked but the passage is constricted so as to leave only a narrow opening for the air to squeeze through, *Spirants* or *Fricatives* are proudcedt *f* in *fan*, *v* in *van*, *s* in *sing*, *th* in *thick* and *sh* in *show* of English and *f* in *fan* 'art', *s* in *ras* 'juice' and š in *šara:rat* 'mischief' of Urdu are fricatives. The fricatives are further classified into *Slit* fricatives and *Groove* frictives depending upon the shape of the narrow opening.

2.6.2.3. *Laterals* are produced by blocking the airstream in the middle of the oral passage but leaving an opening on one side or both sides of the tongue. l in l*eft*, *fee*l and *pu*ll of Englis and l in l*akri*: 'wood', *ta*:l*na:* 'to 'avoid' and *kal*, 'tomorrow' of Urdu are lateral sounds.

2.6.2.4. When the passing of the airstream causes an elastic organ to vibrate rapidly, the sounds produced are called *Trills*. *r* in *ring*, *right* and *pry* of English *r* in *rab* 'almighty,' *bura:* 'bad' and *xabar* 'news' of Urdu can be given as examples for the trill sounds. If the vibration is so short that only a single tap is made, the *Flap* is produced. The difference between a trill and a flap is thus the frequency of vibration. The *r* in *very* and *merry* of London English and ɾ in *ba:ɾa* : 'big', joːr 'joint' and joːr 'break' of Hindi are examples of the flap sound.

2.6.2.4. The airstream passes through the nasal cavity when the velum or soft palate is lowered. The sounds produced in this manner are *Nasals*. *n* in *tin* ,*ng* in *sing* and k*ing* of English and *n* in *nama*k 'salt' *pa:ni* 'water' and k*a:n* 'ear' of Urdu are nasal sounds.

2.6.2.5. When there is a sequence of two vowels in a word, one of them may be non-syllabic in the sense that it does not constitute peak of sonarity and thus the nucleus of the syllable. This non-syllabic vowel is called *Semivowel*. *y* in *year* and *w* in *woo* and *well* of English can be cited as examples for semivowels.

3. BALTI SOUNDS

3.1. Vowels

The following are the vowel sounds found in the Balti language at the Phonetic level. All these vowels are voiced. The vowels marked with: are long vowels.

	Front		Central		Back	
	[2]Unro	[3]Ro	Unro	Ro	Unro	Ro
High	i ɨ i:					u ʉ u:
Highermid	e ɘ e:					o ɵ o:
Lowermid	ɛ				ʌ	ɔ
Low			a ɐ a:			

The above vowels are oral. During their production the soft palate is raised and the nasal passage is closed. When the soft palate is lowered, the airstream passes through the nasal producing nasalized vowels.

3.1.1. Front Vowels

3.1.1.1. [ɪ] In or der to produce this sound, the front of the tongue is raised as high as possible towards the hard palate. However, the airstream passing through the oral cavity is not obstructed by the front of the tongue by touching the hard palate. Nor any kind of constriction is made in the oral cavity. The lips are not rounded but are spread while producing this sound. This vowel is called the high front unrounded short vowel.

This can be compared with *i* in *impure, impress,* and *idiot* of English and *i* in *imtiha:n* 'examination', *kis* 'who' and *kiṭna* 'how much' of Urdu.

It occurs initially and medially but not finally.

Initial		Medial	
išʌn	'enough'	c^{h}imimi·	'old man'
iṣtifɑ	'resign'	riŋmo	'tall'
inka:rbyɑ	'deny'	p^{h}oṛiyʌŋ	'widower'
imtiha:n lenmɑ	'examine'	k^{h}imo	'bitch'
izʌṭ	'respect'	bilɑ	'cat'

3.1.1.2. [i:] This sound is not different from [i] except for the fact that the duration of this sound is longer than that of [i]. There is more muscular tension while producing this sound. This sound is called the high front unrounded long vowel.

This can be compared with *i:* in *i:ra:n* 'persia' *ṯi:r* 'arrow' and *pi:* 'drink' of Urdu. This sound occurs only in initial and medial positions but not in final position.

Initial		Medial	
i:ðul zohɑ	'end of Ramzan	ri:čo	'horn'
		ṯi:l	'oil'
		hʌti:pɑ	'grocer'
		kiṣṯi:pɑ	'sailor'

3.1.1.3. [i·] This sound is longer than [i] but shorter than [i:]. It can be called medium long or middle length vowel. It can be called the high front unrounded medium long vowel.

It occurs in the final position only.

Final	
ri·	'mountain'
mi·	'bachelor'
c^{h}ʌnbi·	'bat'
bi·	'sparrow'
skʌrgi·	'blade'

3.1.1.4. [e] To produce this sound, the front of the tongue is raised towards the hard palate but not as high as it is done for [i]. The lips are spread when the sound [e] is produced. This sound is called the highermid front unrounded short vowel.

It can be compared with *e* in *ebb, education* and *edge* of English.

It occurs initially and medially but not finally in Balti.

Initial		**Medial**	
eun	'those'	serpa·	'wet'
eksʌl	'axle'	sŋezboI	'pillow'
esʌq	'other'	hendʌq	'roof'
		ʈʰemska·	'staircase'
		cʰele·	'hut'
		tʰenma·	'strain'

3.1.1.5 [e:] This sound is produced in the same way as [e]. The only difference between them is duration and muscular tension. This is called the highermid front unrounded long vowel.

This occurs in the medial position only but not in the initial and final positions.

Medial	
ne:ne·	'father's sister'
se:r	'seer'
ne:za·	'spear'
re:ɽa·	'barrow'
gʌɖe:la·	'matress'

3.1.1.6. [e] This sound is shorter than [e:] but longer than [e]. This is called the highermid front unrounded medium long vowel.

It occurs in the final position only.

Final

tyoqse·	'teapoy'
c^{h}ele	'hut
ace	'younger brother'
ne:ne	'father's sister'
ʈoce	'orphan'
yoce	'left-handed

3.1.1.7. [ɛ] This sound is produced by lowering a little the front of the tongue from the neutral position towards the hard palate. The lips are spread when this sound is produced. It is called the lowermid front unrounded short vowel.

This sound occurs in the initial position and not in the medial and final positions.

Initial

ɛla:č	'treatment'
ɛqra:r	'confession'
ɛka:	'there'
ɛla:či·	'cardamom'
ɛspɑ	'bloom'

3.1.2. Back Vowels

3.1.2.1. [u] To produce this sound, the back of the tongue is raised as high as possible but it does not touch the soft palate. The height of the tongue is the same as for [i]. The lips are rounded and protruded. This sound is called the high back rounded short vowel.

u in *pull, put, full* and *fuel* of English and *u* in *uɽna*: 'to fly' and *sunna*: 'to listen' of Urdu can be compared with this sound of Balti.

[u] in Balti occurs initially and medially but not finally.

Initial		Medial	
usṭa:ṭ	'master'	ṭʰukpɑ	'touch'
ukpɑ	'owl'	dulbɑ	'travel'
urbɑ	'hurry'	čʰuṭpɑ	'understand'
usʊ	'coriander seed'	skulbɑ	'wave (the hand)'
uku:mʌṭ	'government'	sṭruŋmɑ	'watch, look at'

3.1.2.2. [u:] This is produced exactly like [u] except for the longer duration and more muscular tension for [u:]. [u:] is called the high back rounded long vowel.

This can be compared with *oo* in *fool, food,* and *loom* and *u* in *fuse, futile* and *future* of English and *u:* in *u:n* 'wool; *su:* ḍ 'interest' and *bu:* 'smell' of Urdu.

In Balti, this sound occurs in the medial position only. It does not occur in the initial and final positions.

Medial

za:ŋzbun	'pots'
kru:wɑ	'washing'
čʰu:zʌm	'crab'
tʰu:likʌrpʊ	'yolk'

3.1.2.3. [ʊ] This sound is called the high back rounded middle long vowel. It occurs in the final position only.

Final

za:ŋzbʊ	'pot'
supʊ	'granite'
zgrʊ	'hunchback'
riʊ	'kid'
skʊ	'idol'

3.1.2.4. [o] To produce this sound, the back of the tongue

is raised towards the soft palate but not as high as for [u]. The height for [o] is same as it is for [e]. But unlike for [e], the lips are rounded and protruded.

It is called the highermid back rounded short vowel.

This sound occurs initially and medially but not finally.

Initial		Medial	
orjʌn	'milk'	c^hoŋbyɑ	'trade'
oɣuʈ	'deaf-mute'	k^horbɑ	'turn around'
oʈbʌrbɑ	'shine'	loqpɑ	'turn over'
ospis	'cream'	krolbɑ	'untie'
ocʌqs	'strainer'	gonmɑ	'wear'

3.1.2.5. [o :] The production of this sound is identical to the production of [o] except for the longer duration and muscular tension. This vowel is called the highermid back rounded long vowel.

It occurs only medially.

Medial	
ha:yo:ŋmɑ	'yawn'
co:ŋpɑ	'merchant'
bomo:n	'girls'
bro:ŋɑ ʈʌŋmɑ	'castrate'
ʈo:liyɑ	'towel'

3.1.2.6]ɑ] This sound is called the highermid back rounded middle long vowel.

It occurs in the final position only.

Final	
bomɑ	'girl'
k^ho·	'he/she'
bʌhmɑ	'bride'
nonɑ	'sister'
zermɑ	'disease'

3.1.2.7. [ɔ][4] The back of the tongue is lowered a little from the neutral position to produce this vowel. However it is not lowered much as the middle part is lowered for [a]. The lips are rounded. This sound is called the lowermid back rounded short vowel.

This can be compared with *o* in *colleague*, *college*, *fond* and *hot* of English.

It occurs in the initial position only.

Initial

ɔmɑ 'curds'

3.1.2.8. [ʌ] The height of the back of the tongue for this vowel is higher than the middle of the tongue is for [a]. This height is comparable to the height of [ɔ]. But unlike for [ɔ], the lips are spread. This sound is called the lowermid back unrounded short vowel.

The vowel in the English words like *cup*, *but*, *pluck*, *couple* and *come* can be compared with this sound.

It occurs medially but not initially and finally.

Medial

$č^{h}$ʌmspɑ	'uniting'
čʌqpɑ	'breaking'
sʌmbɑ	'want; desire'
$ṭ^{h}$ʌqpɑ	'weave (cloth)'
lʌsbyɑ	'work'
nʌsɑ	'age'

3.1.3. Central Vowels

3.1.3.1. [a] The middle part of the tongue (overlapping the front and the back) is lowered. The lips are spread. This sound is called the low central unrounded short vowel.

It occurs in the initial position only.

Initial

ɐpʊ	'grandfather'
aʈɐ	'father'
apiˈ	'grandmother'
aneˈ	'wife'
ɐžʌŋ	'maternal uncle'

3.1.3.2. [a:] This sound is produced exactly like [a] except that the duration is longer and the muscular tension is greater. This is called the low central unrounded long vowel.

It can be compared with the sound *a* in the second syllable of the following English words *advance, alarm, aghast,* etc.

This sound occurs initially and medially but not finally in Balti.

Initial		Medial	
a:m	'mango'	serga:r	'goldsmith'
a:za:ɖiˈ	'freedom'	čorkʰa:ŋ	'church'
za:ŋzbʊ	'pot'		
ya:ŋ	'another'		

3.1.3.3. [ɐ] This sound is called the low central udrounded medium long vowel.

It occurs in the final position only.

Final

gʌrbɐ	'blacksmith'
ŋɐ	'I'
kɐ	'brother'
ɐ	'cat'
smikpɐ	'horse shoe'

3.2. Consonants

The following table gives the consonants found in Balti. All the sounds given here except the nasals are oral sounds

and during their production the nasal passage is closed by raising the soft palate.

p	b		ʈ	ɖ	t	d			k	g		q	
pʰ			ʈʰ		tʰ				kʰ				
					c		č	ǰ					
					cʰ		čʰ						
		f		ð	s	z	š	ž			x	ɣ	h
	m			ɳ		n		ñ		ŋ			
						l							
						ɬ							
						r							
	w							y					

3.2.1. Stops

3.2.1.1. [p] To produce this sound, the air stream from the lungs is stopped by the lower lip pressing against the upper lip. It is released immediately with an explosion. The vocal cords are not vibrated when this sound is produced and so there is no voicing. This sound is called the voiceless bilabial stop.

It can be compared with *p* in *spin*, *keep*, *kept*, *spy*, etc., of English and *p* in *paka:na*: 'to cook' *apna*: 'own' of Urdu.

It occurs in all the three positions, viz., initial, medial and final in Balti.

Initial		Medial	
pɪšʊ	'fly'	pipi'	'breast'
pice	'rat'	popoʈ	'gur'
pʌqzer	'skin disease'	isʈifa	'resign'
pʌqspa	'leather'	sprin	'cloud'
po:lo	'ball'	spulʊ	'feather'

Final

ʈʰup	'darkness'
sʌsup	'dust'
grip	'shade'
rgvʌp	'back'
snʌp	'mucus'

3.1.2.2. [pʰ] is not different from [p] except for the fact that the release of the air pressure collected behind the closure is accompanied with a heavy puff of air. This sound is called the voiceless aspirated bilabial stop.

The initial sound occurring in words such as *pʰ* in *pʰal* 'fruit' and *gupʰa*: 'cave' of Urdu is similar to [pʰ] in Balti. The initial *p* in English words like *pin*, *pick*, *put*, etc., is produced with aspiration.

In Balti, [pʰ] occurs initially and medially but not finally.

Initial		**Medial**	
pʰorʌq	'crow'	čʰupʰinca	'pulley'
pʰorgon	'pigeon'	cʌnpʰeṭ	'midnight'
pʰi:r	'scraper'	sʌrpʰyoks	'east'
pʰuṭums	'sleeve'	bʌqpʰe	'flour'
pʰra	'ruby'	brʌspʰe	'parched rice'

3.1.2.3. [b] is also produced in the same manner as [p]. The only difference is the vibration of vocal cords during the production of [b]. This sound is called the voiced bilabial stop.

This can be compared with *b* of Urdu occurring in *but* 'statue' and *sarbat* 'juice' and *jab* 'when.' In English it occurs in words like *boy*, *beautiful*, *labial*, *about*, *cub*, etc.

It occurs initially and medially in Balti.

Initial		Medial	
bʌhɑ	'cave'	sʌbʌk	'lesson'
bʌʈu	'cooked rice'	sniŋkʰolbɑ	'acidity'
brʌq	'cliff'	sŋežbol	'bolster'
brʌmbɑ	'fat'	ʈʰʌlbɑ	'ashes'
byʌmɑ	'sand'	ʈurbʌps	'slope'

3.1.2.4. [ʈ] To produce this sound, the air stream passing through the oral cavity is blocked near the teeth ridge by the tip of the tongue and then released with an explosion. Since the vocal cords are not vibrated, it is voiceless. This sound is called the voiceless dental stop.

This can be compared with ʈ in *ʃ:aj* 'crown' and *kɑ:ʈna* 'to spin' of Urdu.

It occurs in all the three positions in Balti.

Initial		Medial	
ʈuŋ	'shell'	ʈeʈom	'puzzle'
ʈuʈpɑ	'smoke'	isʈifɑ	'resign'
ʈopči	'button'	sonʈe	'alive'
ʈʌsmɑ	'lace'	sʈoŋmɑ	'empty'
ʈa:r	'telegram'	sʈrin	'worm'

Final

popoʈ	'gur'
cʌnpʰeʈ	'midnight'
sʌlʈʌnʌʈ	'kingdom'
su:ʈ	'interest'
oʈ	'light'

3.1.2.5. [ʈʰ] This sound is not different from [ʈ] except that a heavy puff of air accompanies its release producing aspiration. This is called the voiceless aspirated dental stop.

ʈʰ in *ʈʰa:l* 'tray', *haʈʰo:ɽa:* 'hammer' and *ha:ʈʰ* 'hand' of Urdu can be compared with this sound of Balti language.

This sound occurs initially and medially but not finally.

Initial		Medial	
tʰɛpʊ	'thumb'	žʌqtʰʌŋ	'daily'
tʰukpɑ	'rice, milk and sugar preparation, kʰi:r'	yoqtʰuk	'down'
		lʌqtʰil	'palm (of hand)'
tʰɯ	'spit'	yultʰeq	'threshing floor'
tʰʌmʊ	'battle'		
tʰʌlba	'ashes'	stoŋtʰoq	'harvest'

3.1.2.6. [ɖ] This sound is produced exactly like [t] except that the vocal cords vibrate producing voice. This is called the voiced dental stop.

In Urdu, *ɖ* as in *ɖarɖ* 'pain' and *baɖan* 'body' has the same sound value.

It occurs initially and medially in Balti. It does not occur in the final position.

Initial		Medial	
ɖikɑ	'here'	meŋɖoq	'flower'
ɖoyinnʌŋ	'even though'	ɖʌŋɖʌl	'sieve'
ɖo:bi	'washerman'	qoɖrʌt	'nature'
ɖʌrbɑ	'buttermilk'	bʌŋzɖur	'race'
ɖɑ	'arrow'	skʌrɖɑ	'meteor'

3.1.2.7. [t] To produce this sound, the airstream is blocked by the tip of the tongue against the alveolar region and released with an explosion. The vocal cords are not vibrated. This sound is called the voiceless alveolar stop.

It can be compared with *t* of Urdu occurring in *tama:tar* 'tamato' and *ka:t* 'cut'. In English, we have this sound occurring in *comfort, court*, etc.

It occurs initially, medially and finally in Balti.

Initial		Medial	
tilbʊ	'anklet'	hʌtipɑ	'shopkeeper'
tutʊ	'throat'	kʰa:ti·	'basket'
tuk	'six'	lʌlten	'lantern'
tʌŋkuŋ	'bow'	ba:lti·	'bucket'
tʌŋmʊ	'straight'	pʌtsʌn	'jute'

Final

agʌnbo:t	'steamer'
ko:t	'coat'
biskut	'biscuit'
pa:pʌt	'papad'
gillet	'alluminium'

3.1.2.8. [tʰ] The difference between this sound and [t] is the heavy puff of air accompanying release producing the aspiration in this sound. This sound is called the voiceless aspirated alveolar stop.

This may be compared with tʰ occurring in the following words of Urdu *tʰanda:* 'cold', *lattʰa:* 'log' and ga:tʰ 'knot'

It occurs initially and medially but not finally in Balti.

Initial		Medial		
tʰenbʌsɐ	'afterwards'	jʌrgʌt̪	tʰa:tʰɑ	'ridicule'
tʰup	'darkness'	ɣotʰul	'testicle'	
tʰuk	'thickness'			
tʰa:ku:r	'border'			
tʰu:likʌrpʊ	'yolk'			

3.2.1.9. [d] This sound is produced exactly like [t] except that the vocal cords are vibrated when producing [d]. This is called the voiced alveolar stop.

It occurs in the initial and[5] final positions but not in the medial position.

Initial		Final	
dulʊr	'pigtail'	po:st ka:rd	'postcard'
dulbɐ	'march'		
dʌqčuŋ	'beans'		
dyʊ	'it'		
dyun	'these'		

3.2.1.10. [k] The back of the tongue rises and touches the soft palate or velum blocking the airstream that passes through the oral cavity. It is released immediately with an explosion. The vocal cords are not vibrated when this sound is produced. This sound is called the voiceless velar stop.

It is found in English represented by *c* and *ck* in words like *crack*, *cricket*, and *duck*. In Urdu, *k* occurs in *ka:m* 'work', *maka:n* 'house' and *ruk* 'stop'.

In Balti, it occurs in all the three positions, viz. initial, medial and final.

Initial		Medial	
kiʈili	'kettle'	bɕka:r	'idle'
kisʈi:pɐ	'sailor'	ɖikɐ	'here'
kupʌs	'cotton'	tʌŋkuŋ	'bow'
kucu:r	'latch'	tʰukpɐ	'rice, milk and sugar preparation, kʰi:r'
kus	'voice'	ʈcʌkʈʰur	'chain'
		skʌrɖɐ	'meteor'

Final	
tuk	'six'
šʌk	'doubt'
išʌk	'love'
čikčik	'one'
yoqʈʰuk	'down'

3.2.1.11. [kʰ] This sound is produced in the same way as [k] except for the aspiration present in [kʰ]. This is called the voiceless aspirated velar stop. The initial *k* in words like *kick*, *keep*, *kiss* etc. of English and kʰ in words like kʰ*a:na*: 'food', *si:*kʰ*na:* 'to learn' and *li*kʰ 'write' of Urdu can be compared with this sound.

In Balti, this sound occurs initially and medially but not finally.

Initial		Medial	
kʰi·	'dog'	pʌŋkʰɑ	'fan'
kʰσ	'he/she'	ʈʌʈkʰɑ	'delight'
kʰol	'sick'	coŋkʰur	'bargain'
kʰem	'shovel'		
kʰiri·	'your'	zgʌqkʰʌn	'lockup'
kʰipšʌŋ	'jackel'	ɽumkʰʌn	'potter'

3.2.1.12. [g] The only difference between this sound and [k] is that the vocal cords vibrate in the production of [g]. This sound is called the voiced velar stop.

It can be compared with *g* in *ga:na*: 'song', *ja:gna*: 'to wake' and *lo:g* 'people' of Urdu and *g* in *go*, *game*, *get*, *gamble*, *drag*, *dog*, etc. of English.

In Balti, it occurs only in the initial and medial positions.

Initial		Medial	
got	'loss'	rʌrgi·	'sword'
gočσ	'top'	ɖʌzgro:m	'quiver'
guspu	'hair (of woman)'	zgʌqkʰʌn	'lock up'
gulbɑ	'moment'	zgrums	'story'
gončɑ	'cloth'	rgσ	'represent'
gillet	'alluminium'	rgyʌl	'victory'

3.2.1.13. [q] To produce this sound, the root of the tongue

touches the uvula blocking the airstrem that passes through the oral cavity. With an immediate explosion, the airstream is released. During the poduction of this sound, the vocal cords dø not vibrate. This sound is called the voiceless post-velar (uvular) stop.

In urdu, *q* in *qalam* 'pen', *faqi:r* 'beggar' and *bandu:q* 'gun' can be compared with this sound.

In Balti, this sound occurs in all the positions, viz., initial, medial and final.

Initial		Medial	
qa:r	'blanket'	dʌqčuŋ	'beans'
qa:nun	'law'	ʈʰʌqpɑ	'rope'
qa:ʈil	'murderer'	kʌqpɑ	'imprisonment'
qʌlʌm	'pen'	fulʌqs	'ram'
qʌbzɑ	'hinge'	brʌqčʰɑ	'echo'
qoɖrʌʈ	'nature'	kyʌqkʰ or	'vulture'

Final

ʈoq	'put on'
tʰoq	'ceiling'
yoq	'earth'
brʌq	'mountain'
broq	'residence on the mountain'
pʰyʌq	'prayer'

3.2.2. Affricates

3.2.2.1. [c] To produce the above mentioned consonants, the air pressure built up behind the closure is released suddenly with an explosion. Instead, to produce the affricates the articulator is withdrawn slowly from the point of contact for-

ming a momentary constriction in between the closure and the complete release. The air escaping through the small aperture produces friction. The affricate can thus be equated with a stop immediately followed by a fricative sound. The affricate [c] is produced when the air is blocked at the alveolar region by the tip of the tongue for a short time and then the tip is slowly withdrawn from the alveolar region. The vocal cords do not vibrate. It is called the voiceless alveolar affricate.

It occurs initially and medially but not finally.

Initial		**Medial**	
ceṭri'	'umbrella'	kucu:r	'latch'
cerok	'suspicion'	pice	'rat'
cukse	'shut'	atece	'father's younger brother'
cugu	'nut'	amʌce	'mother's younger brother'
coqs	'like'	cʰupʰinca	'pulley'
coqpo	'rough'	lʌqcuks	'tree'

3.2.2.2. [cʰ] This sound is produced exactly like [c] except for the aspiration. This is called the voiceless aspirated alveolar affricate.

It occurs in the initial and medial positions but not in the final position.

Initial		**Medial**	
cʰe	'soul'	cʰucʰik	'drought'
cʰiks	'joint'	bucʰa	'boy'
cʰele	'hut'	norcʰosa	'pasture'
cʰikpa	'jealousy'	ŋʌlchua	'rest'
cʰuzga:s	'shop'	byʌlcʰoŋs	'wild animal'

3.2.2.3. [č] To produce this sound, the front of the tongue rises and touches the hard palate and blocks the airstream passing through the oral cavity. The air is released slowly by withdrawing the tongue. This produces friction. The vocal

cords are not vibrated. This sound is called the voiceless palatal affricate.

In English, the sound represented by *ch* in the final position of the following words *church, teach, preach,* etc. can be compared with this sound.

In Balti, this sound occurs in all the positions, viz., initial, medial and final.

Initial		Medial	
čoʈ	'regard'	ʈopčuŋ	'hoe'
čučʊ	'nipple'	čikčik	'one'
čenɑ	'gram'	čučʊ	'nipple'
čurgʊ	'nineteen'	čʌčʊ	'bird'
čutki·	'bolt'	gončɑ	'cloth'
čikčik	'one'	dʌqčuŋ	'beans'

Final

pirič	'saucer'
ʂla:č	'remedy'

3.2.2.4. [čʰ] The presence of aspiration in [čʰ] is the only difference between this sound and [č]. This sound is called the voiceless aspirated palatal affricate.

It occurs initially and medially and not finally.

Initial		Medial	
čʰimimi·	'oldman'	ačʰɐ	'brother's wife'
čʰespɑ	'dear'	ba:čʰʌwσ	'father's elder brother'
čʰuɖoŋ	'well'	čʰʌʈčʰʌmɖσ	'agreement'
čʰʊ	'water'	čʰimčʰim	'chickenpox'
čʰukɑ	'ghat'	ʈʈwʌčʰʊ	'diarrhoea'
čʰʌq	'fodder'	ʈčʰoŋ	'gout'
		rgunčʰʌŋ	'wine'

3.2.2.5. [j] The only difference between this sound and [č] is the vibration of vocal cords in the former. This is called the voiced palatal affricate.

j in *jab*, *jar*, *jerk*, etc. of English is similar to this sound. In Urdu, it occurs in *ja:na*: 'to go', *baja:na* : 'to play musical instruments' and *a* : j 'today'.

In Balti, this sound occurs initially and medially but not finally.

Initial		Medial	
jezbɑ	'spirit'	kɑ:jʊr	'cashewnut'
jurma:nɑ	'fine'	orjʌn	'milk'
jʌzi:ra	'island'	sʌñjʌq	'limestone'
jaɣʌm	'wound'	ʂtriñja:mʊ	'cockroach'
		mʌñjɑ	'peacock'
		ɣʌñjʌr	'naked'

3.2 3. Fricatives

3.2.3.1. [f] As pointed out earlier, the airflow is not completely blocked when producing the fricative sounds. Instead, a narrow constriction is formed through which the air is squeezed. To produce [f], the air passes through a narrow constriction formed by the lower lip touching against the upper teeth. The vocal cords are not vibrated during the production of this sound. It is called the voiceless labiodental fricative.

This may be compared with *f* in English words like *face*, *fact*, *faith*, *effect*, *office*, *coffee*, etc. In Urdu, *f* occurs in *fikr* 'anxiety' and *sa:f* 'clean'.

This sound occurs initially and medially in Balti.

Initial		Medial	
fulʌqs	'ram'		
fuɑ	'blow (flute)'	bila:fun	'firefly'
		sefʂtɑ	'stallion'
		gofoʈʊ	'skull'
		ka:fi:	'coffee'
		mo:ŋfʌli:	'groundnut'
		gulɛ afʈa:p	'sunflower'
		bvʌfʊ	'cock'

3.2.3.2. [ð] A slit-like aperture is formed by the tip of the tongue touching against the upper teeth. The air is not completely stopped at this point and it passes through the slit-shaped aperture producing friction. The vocal cords are vibrated during the production of this sound. This is called the voiced dental fricative.

The initial sound occurring in the English words like *them*, *that*, *then*, *this*, etc. is similar to this sound.

It occurs in the medial position only in Balti.

	Medial
i:ðul qʌðir	'Day-Hazarat Ali got hilafat-spiritual charge'
aðiʈ	'Sunday'
aða:lʌʈ	'court'
aza:ði˙	'freedom'
pa:ðiri˙	'clergy man'
pya:ðɑ	'infantry'

3.2.3.3. [s] When the airstream is squeezed through the groove-shaped narrow aperture formed by the blade of the tongue rising against the alveolar region, this sound is produced. The vocal cords are not vibrated during the production of this sound. It is called the voiceless alveolar fricative.

In English, it occurs in words like *spring*, *square*, *sky*, *satisfy*, etc.

It occurs in all the three positions in Balti.

Initial		**Medial**	
suɪn	'three'	zukspɑ	'enter'
		žikspɑ	'fear'
sʈɑ	'under (a stick)'	ʈʰospɑ	'excel'
sʈikpɑ	'build (a house)'	bo:spɑ	'hiss(as a snake)'
skilbɑ	'bend (a stick)	lʌsmi˙	'labourer'
sprɑ	'empty (a jar)'	ʧʰoʃse:n	'jumping'
skwɑ	'command'		

Final

zes	'told'
k^hos	'he/she'
ŋʌs	'I'
ŋis	'two'
lʌs	'job'
ŽʌčʌS	'food'

3.2.3.4. [z] is produced exactly like [s] except that the vocal cords vibrate. It is called the voiced alveolar fricative. The sound occurring in the initial position of the following words is similar to this sound: *zeal*, *zero*, *zigzag*, etc. In Urdu, this sound occurs in *zulm* 'tyranny' *izaṯ* 'respect' and *qʌrz* 'loan'.

It occurs in the initial and medial positions in Balti.

Initial		**Medial**	
ze	'leprosy'	izʌṯ	'respect'
zug	'end'	aza:ðiˈ	'freedom'
zoṯ	'godown'	ḏozʌq	'hell'
zʌn	'food'	kʌbziˈ	'constipation'
zimɑ	'violet'	bʌŋzḏur	'race'
zermσ	'sick'	ḏʌzgro:m	'quiver'

3.2.3.5. [ṣ] A groove shaped narrow aperture is formed by the blade of the tongue by turning back and rising against the region overlapping alveolum and the hard palate. When the airstream passes through this aperture, friction is produced. The vocal cords are not vibrated. This is called the voiceless retroflex fricative.

This sound occurs initially and medially in Balti.

Initial		**Medial**	
ṣpon	'paint'	seſṣṭɑ	'stallion'
ṣkuṯ	'theft'	zʌnṣniŋ	'stale'
ṣmʌq	'army'	se:ṭa:niṣṭɑ	'dragonfly'
ṣmuł	'silver'	krʌqṣṭɑ	'vein'
ṣpʌŋpσ	'evidence'	ṣṭikṣpon	'mason'
ṣkunmɑ	'thief'	rgyʌpṣkʌŋ	'hindleg'

3.2.3.6. [š] To produce this sound, the front of the tongue is raised towards the hard palate and a groove shaped aperture is formed. The airstream is squeezed through this narrow aperture producing friction. The vocal cords are not vibrated. This is called the voiceless palatal fricative.

In English this sound occurs in words like *show, shrink, shoe, bush, fish, cash,* etc.

This sound may be compared to š in the words *šart* 'condition' and *kašiš* 'attraction' of Urdu.

It occurs in all the three positions in Balti.

Initial		**Medial**	
šerbɑ	'people'	pišu	'fly'
ša:l	'shawl'	gʌšɑ	'charm'
šorbɑ	'soup'	penšin	'retire'
šʌlɑ	'harrow'	kʌpšɑ	'shoe'
šʌmo	'mushroom'	rišim	'silk'
šʌrbɑ usu	'green coriander'		

Final

jo:š	'spirit'
behʌš	'heaven'
sa:ziš	'plot; conspiracy'
sufa:riš	'recommend'
χʌšχʌš	'arum'
ʈʌqʈa:po:š	'couch'

3.2.3.7. [ž] is produced exactly like [š] except that the vocal cords are vibrated for this sound. This is called the voiced palatal fricative.

It occurs in the initial and medial positions only.

Initial		Medial	
žiŋ	'field'	ižbi	'four'
žerbɑ	'blind'	ažʌŋ	'maternal uncle'
žugmɑ	'tail'	riva:žɑ	'hoof'
žu:li·	'broom'	ske:žɑ	'birthday'
žimbɑ	'sweet'	skenžuks	'embrace'
žʌqžʌŋ	'festival'		

3.2.3.8. [x̣] The root of the tongue is raised towards the region which is behind the velum. This is called postvelar or uvular region and a narrow aperture is made. The difference between this sound and [x] is in the point in velar region towards which the tongue is raised. The vocal cords are not vibrated while this sound is produced. This is called the voiceless postvelar fricative.

It occurs in all the three positions in Balti.

Initial		Medial	
x̣ɑ	'bitter'	bʌx̣ɑ	'cave'
x̣atɯ	'hut'	bʌx̣mɑ	'bride'
x̣ormɑ	'datepalm'	bʌlox̣ɑ	'crusher'
x̣ʌčʌr	'mule'	ax̣on	'preceptor'
x̣ʌmloq	'dirty'		
x̣ožiŋ	'hearth'		

Final

mʌri:x̣	'mars'
ṭa:rix̣	'date'

3.2.3.9. [ɣ̣] This sound is a voiced counterpart of [x̣]. The vocal cords are vibrated when [ɣ̣] is produced. This is called the voiced postvelar fricative.

It occurs only in the initial and medial positions in Balti.

Initial		Medial	
ɣɑ	'five'	oɣuʈ	'dumb'
ɣon	'melon'	smeɣrɑ	'beard'
ɣotʰul	'testicle'	coɣʌm	'blister'
ɣʌñjʌr	'naked'	jʌɣʌm	'wound'
ɣoršiŋ	'churning rod'	ʈoɣʌle	'frying pan'
ɣʌlʈi	'fault'	sʈʌɣɑ	'gate'

3.2.3.10. [h] When the airstream passes through the glottis, the friction is produced. The vocal cords do not vibrate during the production of this sound. This sound is called the voiceless glottal fricative.

h in *half*, *hail*, *hang*, *have*, *he*, etc. of English words can be compared with this sound. *h* in *ha:ʈ* 'hand' *baha:r* 'spring, season' and *ʈah* 'fold' of Urdu words is similar to this sound.

It occurs initially and medially in Balti.

Initial		Medial	
his	'breath'	biha	'locust'
hiŋ	'asafoetida'	borha	'veil'
hup	'pin'	ʈʌhʌʈ	'throne'
hiliŋ	'noise'	lehmɑ	'right'
hiyɑ	'itch'	sʌrhʌʈ	'boundary'
hegmʌʈ	'courage'		

3. 2. 4. Nasals

3.2.4.1. [m] When producing nasal sounds, the uvula is lowered for the airstream to pass through the nasal passage. The vocal cords are vibrated generally during the production of nasal sounds. The nasal sound [m] is produced by stopping the airstreaem at the lip by the lowerlip pressing against the upper lip. This is called the bilabial nasal.

In English, it occurs in words like *mother, man, marry, bomb, sum*, etc. In Urdu also, it occurs in *mã* 'mother', *Kama:na* 'to earn' and *a:m* 'mango'.

It occurs initially, medially, and finally in Balti.

Initial		Medial	
mi·	'man'	bomɑ	'girl'
met̪	'not'	nimɑ	'sun'
mik	'eye'	skʌrmɑ	'star'
minčɑ	'obscene'	lzʌhimɑ	'moon'
miŋčʌn	'famous'	grʌŋmɑ	'cold'
milʌn	'lane'	byʌmɑ	'sand'

Final

lʌm	'path'
nʌm	'sky'
ɣom	'hole'
dim	'truth'
zgoṭʰem	'threshold'
zgoðem	'godown'

3. 2. 4. 2. [n̪] The airstream is stopped at the upper teeth by the tip of the tongue touching the teeth ridge to produce this sound. This is called the dental nasal.

In Urdu, it occurs in *an̪ḍar* 'inside' and *ban̪ḍar* 'monkey'.

This sound occurs only medially before the homorganic stop in Balti.

Medial

cʌn̪ḍʌn	'sandals'
men̪doq	'flower'
mʌn̪ḍʌr	'temple'
gon̪ḍe	'yesterday'
gʌn̪ḍʌk	'sulphur'
čʌn̪ḍɑ	'pocket'

3.2.4.3. [n] To produce this nasal, the blade of the tongue rises and touches the alveolar region and blocks the airstream. It is called the alveolar nasal.

It occurs in words like *new*, *nestle*, *nerve*, *mind*, *mine*, etc. of English. In Urdu, it occurs in words like *na:m* 'name', *Ka:na* : 'one eyed' and *ka:n* 'ear'.

It occurs initially, medially and finally in Balti.

Initial		**Medial**	
noq	'dim'	nonɑ	'younger brother'
nezɑ	'spear'	ʂʌnik	'cricket'
nene	'father's sister'	ane	'woman'
ninɑ	'then'	ɖʌnmɑ	'antelope'
niqa:p	'veil'	drʌnmɑ	'bear'
nuspɑ	'west'	skenžuks	'embrace'

Final

mʌčen	'first wife'
jʌwa:n	'soldier'
bila:fun	'firefly'
cʌŋʂtrin	'caterpiller'
ɖo:ŋʂtrin	'grass-hopper'
nyeʂtrin	'earthworm'
rga:k^{h}ʌn	'friend'

3.2.4.4. [ñ] To produce this nasal, the front of the tongue is pressed against the hard palate and the air is blocked. This is called the palatal nasal.

In Balti, it occurs initially and medially but not finally.

Initial		Medial	
ñyɑ	'fish'	mʌñjɑ	'peacock'
ñyʌzem	'crocodile'	sʌñjʌk	'limestone'
ñʌlbin	'bedroom'	ɣʌñjʌr	'naked'
ñermɑ	'long pepper'	añjur	'fig'
ñuŋskʌr	'mustard'	sñermɑ	'chilly'
		tʰi:ñi·	
ñʌzuŋs	'fisherman'	'tʰa:li·	'tinplate'

3.2.4.5. [ŋ] For producing this sound, the back of the tongue is raised and pressed against the soft palate [velum] and the airstream is blocked in the oral cavity. This is called the velar nasal.

The final sound occurring in *sing*, *wing*, *ring*, *swing*, etc. of English is velar nasal. In Urdu also, it is found occurring in *raŋ (g)* 'colour' and *saŋ (g)* 'stone'.

In Balti, it occurs in all the positions, viz., initial, medial and final.

Initial		Medial	
ŋa·	'I'	zʌŋgi·	'gnat'
ŋis	'two'	riŋmo	'tall'
ŋon	'publicity'	murʌŋmo	'widow'
ŋisɑ	'twenty'	cʌŋʂtrin	'caterpiller'
ŋispɑ	'next'	ɖo:ŋʂtrin	'grass-hopper'
ŋespɑ	'sin'	ʂŋa:boŋ	'camel'

Final

mʌčuŋ	'second wife'
ažʌŋ	'maternal uncle'
riyoŋ	'rabbit'
cʰʌŋkuŋ	'arm - pit'
ʂkʌŋ	'leg'
ʂna:boŋ	'camel'

3.2.5. Laterals

3.2.5.1. [l] To produce this sound, the tip of the tongue blocks the air by pressing against the middle of the alveolar region but leaves open both sides of the tongue. The vocal cords are vibrated. This is called the voiced alveolar lateral.

In English, the final sound occurring in *ball, bull, well,* etc. is alveolar lateral. In Urdu, it occurs in *la:l* 'red', *bilkul* 'absolutely' and *kal* 'tomorrow'.

It occurs initially, medially and finally in Balti.

Initial		Medial	
luṭ	'right'	rilʊ	'pill'
luk	'sheep-she'	rilbʊ	'globe'
luŋ	'sling'	rublɑ	'rotten'
luspɑ	'last'	milʌn	'lane'
limik	'key'	melʌn	'tongs'
lilʌn	'linen'	rgulʌp	'rose'

Final

šɑ:l	'shawl'
t^{h}ul	'egg'
qa:ṭil	'murderer'
ṣmul	'silver'
ɣot^{h}ul	'testicle'
ryʌl	'fibre'
rgyʌl	'victory'

3.2.6. Fricativized Lateral

3.2.6.1. [ɬ] During the production of this lateral sound, the tip of the tongue blocks the air by pressing against the alveolar region but leaving open both sides of the tongue. The air passing through the sides of the tongue causes friction. The

vocal cords do not vibrate. This sound is not found either in Dravidian languages or in Indo Aryan languages.

In Balti, it occurs initially and medially followed by a consonant.

Initial		Medial	
ʈɪiyɑ	'navel'	meʈčʰe	'flame'
ʈɪwɑ	'belly'	meʈčor	'lampworship'
ʈɪʌbɑ	'see'	skuʈčor	'idolator'
ʈɪohspɑ	'to be hungry'	ʂɪʌʈcʰʌq	'whip'
ʈčoŋ	'gout'	ʂmoʈčʌqs	'plough share'
ʈčorbɑ	'worship'		

3.2.7. Flaps

3.2.7.1 [r] To produce this sound, the tip of the tongue makes a single tap against the alveolar region. The vocal cords vibrate. This is called the voiced alveolar flap.

In Balti, it occurs in all the three positions, viz., initial, medial and final.

Initial		Medial	
rilɯ	'tablet'	wa:ris	'descendants'
ri:čo	'horn'	murʌŋmo	'widow'
rijʌnmɑ	'raw'	mirgospɑ	'reject'
rɖuʈ	'devil'	mʌrɖuŋ	'beam'
rɖʌmɑ	'beautiful'	yurbɑ	'canal'
rɖwɑ	'stone'	šorbɑ	'soup'

Final

qa:r	'blanket'
boχa:r	'fever'
beka:r	'idle'
mʌɳɖʌr	'temple'
añjur	'fig'
ñuŋskʌr	'mustard'

3.2.7.2. [ɽ] The difference between [r] and [ɽ] is that in the case of the latter the tip of the tongue is curled and turned back to make a single tap against the hard palate. This is called the voiced retroflex flap.

It occurs in Urdu words like *baɽa*:'big' and *to*:ɽ 'break'.

It occurs in Balti in the medial position only.

Medial

beɽa'	'musician (instrument player)'
gʌɽi'	'clock'
re:ɽa	'barrow'
kʌbʌɽi'	'kabadi'
hʌʈkʌɽi'	'handcuff'
pʰoɽiyʌŋ	'widower'

3.2 8. Semivowels

3.2.8.1. [w] This is produced with protruded lips. The lower lip is raised towards the upper lip but the lips are not drawn close enough to cause friction nor are they far apart as in the case of vowels. The vocal cords vibrate. This is less sonarant than a vowel. This is called the voiced bilabial semivowel.

It occurs in the English words like *why*, *what*, *when*, etc. In Urdu, it is found occurring in *wa:ris* 'heir', *waba*: 'epedemic' and *na:w* 'boat'.

It occurs initially and medially in Balti.

Initial		Medial	
wʌn	'pumpkin'	luwʌq	'sheep'
wʌqs	'time'	nʌwro:z	'a festival celebrated by Shya Muslims (21st March)'
wʌce.	'fox'	ŋu:wa'	'weeping'

wʌjʁ	'cause'	zʌwa:r	'pilgrimage'
wʌzi:r	'minister'	šwiʈ	'whistle'
wʌkki:l	'lawyer'	ɖwa:byʁ	'bless'

3.2.8.2. [y] The manner of articulation is same for both [w] and [y] but the articulators involved are different. For producing [y] the front of the tongue is raised towards the hard palate. However as we mentioned for [w], it is not raised close enough to the palate to produce friction nor is it far away from to let the airflow pass freely as in the case of vowels. The vocal cords vibrate. This is less sonorant than a vowel. This is called the voiced palatal semivowel.

In Urdu, it occurs in *ya:r* 'friend', *ya:ɖ* 'rememberance' and *ziyʁ:ɖa:* 'much'.

In Balti, it occurs only initially and medially.

Initial		Medial	
yul	'village'	ñimiyoʈ	'sunshine'
yuŋ	'tumeric'	mʌya:r	'standard'
yoq	'earth'	pya:ðʁ	'infantry'
yilbʊ	'hide and seek'	šyʌqs	'judgement'
yeŋnʁ	'out of'	ñyʁ	'fish'
yurbʁ	'canal'	rya:sʌʈ	'state'

NOTES

1. There are only two lexical items which have nasalized vowels. ã: is in free variation with *a*:ŋ, *e.g.*, *bã:s ba*:ŋ*s* 'bamboo' ẽ occurs in *kawẽl* 'lotus' which is a loan word.

2. unr–unrounded

3. Ro–Rounded

4. This sound occurs in only one example.

5. We have only one example for the final position of this sound and that too is a loan from English.

4. PHONETIC DRILL

Pairs of sounds in words with minimal differences are given below for practising and differentiating similar sounds in Balti. The words may be practised both vertically and horizontally.

4.1. Vowels

4.1.1. Front Vowels

4.1.1.1. High front unrounded short vowel [i] and higher-mid front unrounded short vowel [e].

izʌt̪	'respect'	esʌk	'other'
it̪uk	'memory'	eksʌl	'axle'
išʌn	'enough'	eun	'those'
ŋispɑ	'second'	ŋespɑ	'sin'
ʂcis	'counted'	ʂces	'danced'

4.1.1.2. High front unrounded short vowel [i] and lower-mid front unrounded short vowel [ɛ].

izʌt̪	'respect'	ɕqra:r	'confession'
isʌn	'many'	ɕkɑ	'there'
it̪uk	'memory'	ɕla:č	'remedy'
ibɑ	'hide'	ɕspɑ	'bloom'

4.1.1.3. High front unrounded short vowel [i] and high back rounded short vowel [u].

istʌw	'stove'	usṭa:ṭ	'master'
rilbɑ	'roll'	rulbɑ	'rotten'
hliŋbu	'flute'	hluŋpo	'breeze'
moṭik	'pearl'	moṭuk	'morning'

4.1.1.4. High front unrounded short vowel [i] and high front unrounded long vowel [i:].

pʰiŋma·	'rug'	pʰi:ma·	'get out'
pʰis	'clean'	pʰi:s	'fees'
sil	'shade'	ʈi:l	'oil'
ba:mir	'priest'	zʌmi:r	'conscience'

4.1.1.5. High front unrounded medium long vowel [i·] and highermid front unrounded medium long vowel [e].

api·	'grandmother'	ace·	'paternal uncle'
pipi·	'breast'	pice·	'rat'
bi·	'bird'	ɖre·	'ghost'
bʌrmi·	'broker'	bʌŋge·	'opium'
ɖo:sʈi·	'friendship'	ɖʌre·	'now'
ka:pi·	'notebook'	kʌŋse·	'sock'

4.1.1.6. High front unrounded medium long vowel [i·] and high back rounded medium long vowel [u].

api·	'grandmother'	usu	'coriander seed'
pipi·	'breast'	pišu	'fly'
pʰʌli·	'shield'	pʰʌlu	'alphabet'
kʰi·	'dog'	ʈʰu	'spitting'
topči·	'button'	tukču	'sixty'

4.1.1.7. High front unrounded medium long vowel [i·]. and high front unrounded long vowel [i:]

alsi·	'linseed'	ʈi:l	'oil'
pipi·	'breast'	i:ðul fiʈir	'end of Ramzan'
pʌri·	'a kind of wooden vessel'	ami:r	'noble (man)'
bera:ki·	'crutch'	pʰi:ŋma	'to get out'
bi·	'bird'	pʰi:s	'fees'
ʈopči·	'button'	ba:wa:si:r	'piles'

4.1.1.8. High front unrounded medium long vowel [i·]. and high front unrounded short vowel [i].

ba:lti·	'bucket'	ba:mir	'priest'
bʌrmi·	'broker'	bʌniyʌn	'banian'
kisţi·	'boat'	kisţ	'instalment
kursi·	'chair'	kirkir	'circle'
ḍʌlčini·	'cassia leaf'	dʌŋšiŋ	'drumstick'
ḍo:sţi·	'friendship'	driŋ	'today'

4.1.1.9. Highermid front unrounded short vowel [e] and lowermid front unrounded short vowel [ɛ].

eun	'those'	ɛka·	'there'
eksʌl	'axle'	ɛqra:r	'confession'
esʌq	'other'	ɛla:č	'remedy'

4.1.1.10. Highermid front unrounded short vowel [e] and highermid back rounded short vowel [o].

č^{h}espa·	'dear'	č^{h}os	'religion'
serpo·	'pale'	sorpo:n	'cook'
senmo·	'funny'	son	'seed'
zermo·	'pain'	zorba·	'sickle'
šel	'glass (raw)'	šol	'plough'
hegmʌţ	'courage'	hokumʌţ	'reign'

4.1.1.11. Highermid front unrounded short vowel [e] and lowermid back unrounded short vowel [ʌ].

meqna:ţis	'magnet'	mʌqsum'	'innocent'
mespo.	'ancestors'	mʌqpa·	'son-in-law'
nene·	'father's sister'	nʌma·	'daughter-in-law'
lehmo·	'right'	lʌma·	'monk'

yendri·	'spinning wheel'	yʌŋmɑ	'light'
besbɑ	'travel'	bʌpspɑ	'alight'

4.1.1.12. Highermid front unrounded short vowel [e] and highermid front unrounded long vowel [e:].

ser	'gold'	se:r	'walk(evening)'
beʈɑ	'calf'	be:ʈʌmi:z	'civilized'
beñč	'bench'	be:t	'bat'
beyil ga:ɽi·	'bullock cart'	be:ɣʌmber	'prophet'
tʰektʰek	'strong'	te:bil	'table'
genlɑ	'upwards'	gye:rɑ	'siege'

4.1.1.13. Highermid front unrounded medium long vowel [e·] and low central unrounded medium long vowel [a·].

ace·	'paternal uncle'	aʈɑ	'father'
ane·	'maternal aunt'	annɑ	'loud'
are·	'that'	arɑ	'saw'
bʌqpʰe·	'flour'	berkʰɑ	'stick'
bʌŋge·	'opium'	bʌrgɑ	'sometime'
brʌspʰe·	'parched rice'	brʌqčɑ	'cut'

4.1.1.14. Highermid front unrounded medium long vowel [e·] and highermid back rounded medium long vowel [o·].

bʌqpʰe·	'flour'	bʌqpʰɑ	'bridegroom'
ace·	'paternal uncle'	apɑ	'grandfather'
are·	'that'	alɑ	'lullaby'
ʈoce·	'orphan'	beʈɑ	'calf'
kore·	'cup'	kuskɑ	'chin'
kʰʌze·	'fork'	kʰɑ	'he/she'

4.1.1.15. Highermid front unrounded medium long vowel [e·] and highermid front unrounded long vowel [e:].

kore·	'cup'	kre:lč^{h}ukpɑ	'insult'
kʌŋce·	'sock'	se:r	'walk (evening)'
k^{h}ʌrpo:ce·	'fortress'	ste:j	'satage'
gonde·	'yesterday'	šiŋše:r	'Saturday'
cukse·	'putting something on the floor'	me:lɑ	'festival'
c^{h}e·	'soul'	de:kin	'but'

4.1.1.16. Highermid front unrounded medium long vowel [e·] and highermid front unrounded short vowel [e].

ŋʌle·	'tired'	lembɑ	'right'
wʌce·	'fox'	rewʌq	'goat-she'
yoce·	'left-handed'	yeldʌq	'branch'
ace·	'paternal uncle'	eun	'those'
ane·	'woman'	esʌq	'other'
are·	'that'	amen	'peace'

4.1.2. Central Vowels

4.1.2.1. Low central unrounded short vowel [a] and lowermid back rounded short vowel [ɔ].

amɑ	'mother'	ɔmɑ	'curds'

4.1.2.2. Low central unrounded short vowel [a] and lowermid back unrounded short vowel [ʌ].

abrʌq	'mica'	pʌtʌq	'herb'
atece·	'father's younger brother'	kʌlʌq	'clay'

aphor	'glass'	kʌrpɑ	'white'
aðʌp	'literature'	ɖʌnmɑ	'antelope'
ažʌŋ	'maternal uncle'	tʌki·	'bread'
amɑ	'mother'	dʌŋšiŋ	'drumstick'

4. 1. 2. 3. Low central unrounded short vowel [a] and low central unrounded long vowel [a:].

ažʌŋ	'maternal uncle'	a:za:ði·	'freedom'
amen	'peace'	a:m	'mango'

4. 1. 2. 4. Low central unrounded medium long vowel [ɑ] and low central unrounded long vowel [a:].

aʈɑ	'father'	imaːŋɖaːr	'honest'
amɑ	'mother'	imʈ·haːn	'examination'
purčɑ	'peg'	usʈaːʈ	'master'
bilɑ	'cat'	ʂlaːč	'remedy'
bucʰɑ	'bov'	paːcɑ	'king'
ʈuʈpɑ	'smoke'	baːmir	'priest'

4.1. 2. 5. Low central unrounded medium long vowel [ɑ·] and low central unrounded short vowel [a].

bʌrgɑ·	'sometimes'	api·	'grandmother'
brʌqčʰa·	'echo'	apo·	'grandfather'
ʈʌba·	'sow'	abrʌq	'mica'
ʈʌsma·	'lace'	aʈa·	'father'
ʈʰa·	'fallowland'	aʈʌma·	'parents'
ɖulba·	'soft'	aðiʈ	'Sunday'

4.1.3. Back Vowels

4.1.3.1. High back rounded short vowel [u] and higher-mid back rounded short vowel [o].

posum	'three–fourth'	popoʈ	'gur'

pʰukma·	'straw'	pʰoɣon	'spoon'
bun	'interest'	bor	'water lemon'
ʈuŋ	'shell'	ʈoŋ	'give'
ɖugsa	'hermitage'	ɖorma·	'trousers'
guspu·	'hair (woman)'	goslʌq	'cloth'

4. 1. 3. 2. High back rounded short vowel [u] and high back rounded long vowel [u:].

sul	'wrinkle'	su:r	'pig'
tuk	'six'	tu:p	'tube'
mʌčuŋ	'procession'	julu:s	'second wife'
ʈa:luk	'taluk'	ʈʌmbu:r	'tambura'
kurkum	'saffron'	kosu:rwa:r	'guilty'
kučur	'latch'	kʌñju:s	'miser'

4. 1. 3. 3. High back rounded medium long vowel [u·] and highermid back rounded medium long vowel [o·].

kru·	'corner'	krʊ	'wheat'
rgu·	'nine'	rgo·	'body'
zgru·	'hunchback'	zgo·	'door'
čʰu·	'water'	cʰo·	'grandson'
şcugu·	'nut'	čʰ owo·	'great'
su·	'who'	so·	'tooth'

4. 1. 3. 4. High back rounded medium long vowel [u·] and high back rounded long vowel [u:].

ka:ju·	'cashewnut'	su:ʈ	'interest'
kru·	'corner'	su:r	'pig'
kʰ empu·	'oar'	metu:ʈ	'matchstick'
pʰ ru·	'child'	mʌzbu:ʈ	'strong'
kʰ ʌbu·	'bud'	mʌzɖu:r	'labourer'
čʌču·	'bird'	kʌñju:s	'miser'

4. 1. 3. 5. High back rounded medium long vowel [u·] and high back rounded long vowel [u:].

usu·	'coriander seed'	kurɖo:s	'lock'
aŋga:ru·	'Tuesday'	kursi·	'chair'
alu·	'potato'	gulba·	'moment'
pišu·	'fly'	bulon	'debt'
pʌqbu·	'brick'	buyʌŋ	'hole'
bo:ŋbu·	'donkey'	kupa:s	'cotton'

4. 1. 3. 6. Highermid back rounded short vowel [o] and lowermid back rounded short vowel [ɔ].

oɣuʈ	'deaf'	ɔma·	'curds'

4.1.3.7. Highermid back rounded short vowel [o] and lowermid back unrounded short vowel [ʌ].

popoʈ	'gur'	pʌtʌq	'herb (medicinal)'
polo·	'ball'	pʌri·	'a kind of wooden vessel'
pʰorgon	'pigeon'	pʰʌrka·	'across'
bomo·	'girl'	bʌm	'bomb'
ʈoce·	'orphan'	ʈʌsma·	'lace'
ɖozʌq	'hell'	ɖʌzgro:m	'quiver'

4. 1. 3. 8. Highermid back rounded short vowel [o] and highermid back rounded long vowel [o:].

soba·	'province'	so:fa·	'sofa'
boʈʌl	'bottle'	bo:ðu·	'Wednesday'
bomo·	'girl'	bo:spa·	'various cries'
ʈoŋ	'give'	ʈo:p	'cannon'
ɖoqmo·	'narrow'	ɖo:sʈi·	'friendship'
ɖozʌq	'hell'	ɖo:ra:n	'during'

4.1.3.9. Highermid back rounded medium long vowel [o·] and highermid back rounded long vowel [o:].

ɖʌnmo·	'antelope'	ʈo:p	'cannon'
ɖremo·	'demon'	ɖo:sʈi·	'friendship'
tʌŋmo·	'starlight'	ɖo:ra:n	'during'
kusko·	'chin'	šʌspo:s	'quilt'
kro·	'wheat'	sorpo:n	'cook'
kʰimo·	'bitch'	jo:s	'spirit'

4. 1. 3. 10. Highermid back rounded medium long vowel [o·] and highermid back rounded short vowel [o].

polo·	'ball'	solba·	'coal'
pʰiqpo·	'rich'	sotol	'powder'
cʰo·	'hot'	coqs	'like'
čo·	'peon'	coŋ	'onion'
čomo·	'nun'	gonča·	'cloth'
so·	'tooth'	goʈ	'loss'

4. 2. Consonants

4.1.2. Stops

4.2.1.1. Voiceless bilabial stop [p] and voiced bilabial stop [b].

pipi·	'breast'	bip	'ferryboat'
purčʰa·	'coatstand'	bucʰa·	'son'
pa:ca·	'king'	ba:čʰʌwo·	'father's elder brother'
brumpa·	'small pox'	brʌmbo·	'fat'
hluŋpo·	'breeze'	hliŋbu·	'flute'
šʌrpa·	'clamp'	šorba·	'soup'

4.2 1.2. Voiceless bilabial stop [p] and voiceless aspirated bilabial stop [pʰ].

pisṭo:l	'pistol'	pʰ isṭa·	'out'
puksmo·	'knee'	pʰ ukma·	'straw'
posum	'three-fourth'	pʰ oso	'pride'
ρʌŋkʰ a·	'fan'	pʰ ʌŋ	'spindle'
pya:ða·	'infantry'	pʰ ya:lo·	'winnowing pan'
pʌri·	'a kind of wooden vessel'	pʰ ʌli·	'shield'

4.2.1.3. Voiceless bilabial stop [p] and voiceless labio–dental fricative [f].

supa:ri·	'arecanut'	sufa:ris	'recommend'
aphor	'glass (used as vessels)'	afṭa·	'week'
ṭʰepo·	'thumb'	dofo:s	'gadda'
ka:pi·	'note book'	ka:fi·	'coffee'
ukpa·	'owl'	isṭifa·	'resignation'
kʌpša·	'shoe'	dʌfʌŋs	'a festival-people gather in one place and shoot arrows-end of February or beginning of March'

4.2.1.4. Voiced bilabial stop [b] and voiceless aspirated bilabial stop [pʰ].

bisṭʌra·	'bed'	pʰisṭa·	'out'
bulbul	'nightingale'	pʰulgo:bi·	'cauliflower'
boɣa:r	'fever'	pʰoɣun	'spoon'
bʌl	'wool'	pʰʌl	'width'
ṭʌba·	'sow'	bilʌpʰun	'firefly'
ka:miya:bi·	'success'	byʌpʰo·	'bird'

4.2.1.5. Voiced bilabial stop [b] and voiceless labiodental fricative [f].

so:ba·	'province'	so:fa·	'sofa'
ɖo:bi·	'washerman'	dofo:s	'gada'
ʈʌbis	'armlet'	dʌfʌŋs	'people gather in one place and shoot arrows—a kind of festival'
abrʌq	'mica'	afʈa·	'week'
ʈʌba·	'sow'	isʈifa·	'resignation'
kʰʌbu·	'bud'	ka:fi·	'coffee'

4.2.1.6. Voiceless aspirated bilabial stop [pʰ] and voiceless labiodental fricative [f].

bilʌpʰun	'firefly'	dofo:s	'gada'
bʌqɒʰe·	'flour'	afʈa·	'week'
bʌqpʰo·	'bridegroom'	ka:fi·	'coffee'
brʌspʰe·	'fluffed rice'	isʈifa·	'resignation'
byʌpʰru·	'chicken'	ʈufa:n	'storm'
kʰipʰru·	'puppy'	ɖʌfʈʌr	'office'

4.2.1.7. Voiceless dental stop [ʈ] and voiced dental stop[ɖ].

ʈruk	'six'	ɖuk	'be'
ʈo:ʈa·	'parrot'	ɖo:ʈi·	'dhoti'
ʈra·	'cage'	ɖre·	'ghost'
ʈʌzbi·	'rosary'	ɖʌzgro:m	'quiver'
ʈa:r	'telegram'	ɖa:l	'dal'
soŋʈe·	'alive'	cʌŋɖʌn	'sandal'

4.2.1.8 Voiceless dental stop [t̪] and voiceless aspirated dental stop [t̪ʰ].

t̪oq	'put on'	t̪ʰ oq	'ceiling'
t̪uru·	'spindle'	t̪ʰ uru·	'colt'
t̪oŋ	'give'	t̪ʰ oŋ	'see'
pʰ it̪oq	'afternoon'	st̪on̪t̪ʰ oq	'harvest'
ŋʌt̪ʌŋ	'we'	byʌt̪ʰ ʌŋ	'desert'

4.2.1.9. Voiceless dental stop [t̪] and voiced dental fricative [ð].

bot̪ʌl	'bottle'	bo:ðu·	'Wednesday'
bet̪o·	'calf'	ba:ðem	'almond'
pʰut̪ums	'sleeve'	pya:ða·	'infantry'
at̪ir	'scent'	aði̪t̪	'Sunday'
at̪ʌma·	'parents	aða:lʌt̪'	'criminal court'
at̪a·	'father'	aðʌp	'literature'

4.2.1.10. Voiced dental stop [d̪] and voiceless aspirated dental stop [t̪ʰ].

d̪unla·	'before'	t̪ʰurla·	'down'
d̪ʌqpo·	'husband'	t̪ʰʌqpa·	'rope'
d̪a·	'arrow'	t̪ʰ.ʌ·	'fallow land'
d̪ʌn̪d̪ʌl	'sieve'	st̪on̪t̪ʰoq	'harvest'
ld̪oq	'mud'	yult̪ʰ eq	'threshing floor'

4.2.1.11. Voiced dental stop [d̪] and voiced dental fricative [ð].

ima:n̪d̪a:r	'honest'	i:ðe· mela:t̪	'birthday of prophet Mohammed'
d̪unla·	'before'	wa:ði·	'valley'
d̪a·	'arrow'	aðʌp	'literature'

lḍoq	'mud'	aðit	'Sunday"
ḍuk	'tɛe'	bo:ðu·	'Wednesday'
ḍa:l	'dal'	pya:ða·	'infantry'

4.2.1.12. Voiceless aspiratad dental stop [$ṭ^h$] and voiced dental fricative [ð].

pʌ$ṭ^h$ʌr	'floor'	sʌðir	'president'
byʌ$ṭ^h$ʌŋ	'desert'	riðʌqs	'deer'
goŋ$ṭ^h$oq	'storey'	ba:ðem	'almond'
snʌ$ṭ^h$oq	'morning'	aða:lʌṭ	'criminal court'
žʌq$ṭ^h$ʌŋ	'daily'	aðʌp	'literature'
rgu$ṭ^h$ep	'hernia'	wa:ði·	'valley'

4.2.1.13. Voiceless alveolar stop [t] and voicedal veolar stop [d].

tilbu·	'anklet'	dulba·	'march'
tulu·	'ear ornament'	dulu·	'pigtaïl'
c^hotok	'island'	c^hʌdʌŋ	'sympathy'
gʌnta·	'hour'	gʌnda·	'caps made up of skins worn by Ladakhi ladies'
$č^h$ʌnti·	'short'	škʌndik	'stammerer'
tʌŋkuŋ	'bow'	dʌŋšiŋ	'drumstick'

4.2.1.14. Voiceless alveolar stop [t] and voiceless aspiratcd alveolar stop [t^h].

tuk	'six'	t^huk	'thickness'
tu:p	'tube'	t^hup	'darkness'
tiŋ	'tin'	t^henbʌse·	'afterwards'
tulu·	'ear ornament'	t^hulikʌrpo·	'yolk'

sotol	'powder'	ɣotʰul	'testicle'
pʌtʌq	'herb'	jʌrgʌʈ tʰʌtʰa·	'ridicule'

4 2.1.15. Voiceless alveolar stop [t] and voiceless dental stop [ʈ].

tuk	'six'	ʈuk	'poison'
tʌŋ	'conflict'	ʈoŋ	'give'
tʌmba:ku·	'tobacco'	ʈʌmbu:r	'tambura'
pʌtʌq	'herb'	pʰiʈoq	'afternoon'
pʌtsʌn	'jute'	pʰisʈa·	'out'
sotol	'powder'	boʈʌl	'bottle'

4.2.1.16. Voiceless alveolar stop [t] and voiced dental stop [ɖ].

tikʰa·	'contract'	ɖika·	'here'
tuk	'six'	ɖuk	'sit'
tulu·	'ear ornament'	ɖulba·	'soft'
tuʈpa·	'drag (the feet)'	ɖukpa·	'dwell'
pʌtʌq	'herb'	meɳɖoq	'flower'
pʌtsʌn	'jute'	skʌrɖa·	'meteor'

4.2.1.17. Voiceless alveolar stop [ʈ] and voiceless aspirated dental stop [ʈʰ].

tutu·	'throat'	ʈʰukpa·	'kʰi:r–sugar rice and milk preparation'
tulu·	'ear ornament'	ʈʰuru·	'colt'
tʌp	'tap'	ʈʰʌp	'oven'
tʌŋgi·	'sole'	ʈʰʌŋčʰu·	'gum'
tʌki·	'bread'	ʈʰʌli·	'plate'
tʌmba:ku	'tobacco'	ʈʰʌmspa·	'wrestling'

4.2 1.18. Voiced alveolar stop [d] and voiceless aspirated alveolar stop [tʰ].

dulu·	'pigtail'	tʰu:likʌrpo·	'yolk'
demʌŋ	'drum'	tʰerbʌse·	'afterwards'
dʌha:na·	'post office'	tʰa:ku:r	'barber'
dulba·	'march'	tʰukpo·	'thick'
duwaṭ	scissors'	tʰup	'darkness'
cʰʌdʌŋ	'sympathy'	ɣotʰul	'testicle'

4.2.1.19. Voiced alveolar stop [d] and voiceless dental stop [t̪].

dulba·	'march'	t̪usla·	'during'
dʌqčuŋ	'beans'	t̪ʌqriŋs	'far'
dulu·	'pigtail'	t̪uru·	'spindle'
duwʌṭ	'scissors'	t̪urbʌps	'slope'
dʌha:na·	'post office'	t̪ʌhʌṭ	'throne'
dʌŋšiŋ	'drumstick'	t̪ʌmbu:r	'tambura'

4.2.1.20. Voiced alveolar stop [d] and voiced dental stop [d̪].

dulba·	'march'	d̪ulba·	'soft'
dulu·	'pigtail'	d̪ika·	'here'
dim	'trunk (of tree)'	d̪i·	'this'
dʌqčuŋ	'beans'	d̪ʌqpo·	'husband'
dra:ma·	'drama'	d̪remo·	'demon'
cʰʌdʌŋ	'sympathy'	sʌld̪ʌqs	'lizard'

4.2.1.21. Voiced alveolar stop [d] and voiced dental fricative [ð].

dim	'trunk (of tree)'	aðiṭ	'Sunday'

dulba·	'march'	aðʌq	'literature'
dulu·	'pigtail'	bo:ðu·	'Wednesday'
dyu·	'it'	wa:ði·	'valley'
cʰʌdʌŋ	'sympathy'	sʌðir	'president'

4.2.1.22. Voiceless aspirated alveolar stop [tʰ] and voiceless dental stop [t̪].

tʰuk	'poison'	t̪ruk	'six'
tʰup	'darkness'	t̪opči·	'button'
ɣotʰul	'testicle'	čʰʌst̪ʌn	'mat'

4.2.1.23. Voiceless aspirated alveolar stop [tʰ] and voiceless aspirated dental stop [t̪ʰ].

tʰ enbʌse·	'afterwards'	t̪ʰepo·	'thumb'
tʰukpo·	'thick'	t̪ʰukpa·	'kʰ i:r–milk, rice and sugar preparation'
tʰ ulikʌrpo·	'yolk'	t̪ʰ urla·	'down'
tʰ a:ku:r	'barber'	t̪ʰ ʌqpa·	'rope'
ɣotʰ ul	'testicle'	yoqt̪ʰ uk	'down'

4.2.1.24. Voiceless velar stop [k] and voiced velar stop [g].

kušu·	'apple'	guspu·	'hair (of woman)'
kore·	'cup'	gore·	'late'
kʌŋku·	'claw'	gʌŋkʰʌn	'full'
pʰ ʌrka·	'across'	pʰorgon	'pigeon'
čʰ ʌŋkuŋ	'arm–pit'	čʰ ʌŋgu·	'club–foot'

4.2.1.25. Voiceless velar stop [k] and voiceless aspirated velar stop [kʰ].

kore·	'cup'	kʰ	'area'

kaˑ	'piller'	kʰaˑ	'mouth'
krʌlbaˑ	'distribute'	kʰrelbaˑ	'shame'
kʌŋkuˑ	'claw'	gʌŋkʰʌn	'full'
tʌkiˑ	'loaf'	tʰekʰaˑ	'contract'
be:ka:r	'idle'	bʌkʰʌŋ	'cowshed'

4.2.1.26. Voiceless velar stop [k] and voiceless postvelar stop [q].

kʌpšaˑ	'shoe'	qʌbzaˑ	'hinge'
kʌlʌq	'clay'	qʌlʌm	'pen'
ka:fir	'athiest'	qa:ṭil	'murderer'
ṭʰukpaˑ	'kʰi:r'	ṭʰʌqpaˑ	'rope'
cʰiks	'joint'	coqs	'like'
zḏikpaˑ	'innocent'	kʌqpaˑ	'imprisonment'

4.2.1.27. Voiceless velar stop [k] and voiceless postvelar fricative [χ].

kornʌq	'oilcake'	χormaˑ	'datepalm'
kʌskaˑ	'ladder'	χʌšχʌš	'arum'
kaˑ	'piller'	χoˑ	'bitter'
be:ka:r	'idle'	boχa:r	'fever'
sʌrka:r	'government'	χʌrχʌtuˑ	'ant'
anikaˑ	'loudly'	aχon	'preceptor'

4.2.1.28. Voiceless velar stop [k] and voiced postvelar fricative [ɣ].

kirkir	'round'	ɣir	'stallion'
koreˑ	'cup'	ɣorsiŋ	'churning rod'
kʌpšaˑ	'shoe'	ɣʌpču	'fifty'

kʌñju:s	'miser'	ɣʌñjʌr	'naked'
ḍika·	'here'	oɣuṭ	'deaf'
be:ka:r	'idle'	čoɣʌm	'blister'

4.2.1.29. Voiceless velar stop [k] and voiceless glottal fricative [h].

ka·	'piller'	ha·	'yawn'
kʌqpa·	'aunt's son'	hʌq	'truth'
kʌmbʌl	'blanket'	hʌmla·	'attack'
pʰukma·	'straw'	lehmo·	'right'
ḍika·	'here'	sihʌṭ	'health'
sʌrka:r	'government'	sʌrhʌṭ	'boundary'

4 2.1.30. Voiced velar stop [g] and voiceless aspirated velar stop [kʰ].

gσ	'head'	kʰσ	'she/he'
gʌr	'where'	kʰʌr	'palace'
gri·	'knife'	kʰri	'support (stick) for the creeper'
dyʌŋgu·	'pandal'	gʌŋkʰʌn	'full'
ṣcugu·	'nut'	tekʰa·	'contractor'

4.2.1.31. Voiced velar stop [g] and voiceless postvelar stop [q].

gʌlgi·	'shoulder'	qʌlʌm	'pen'
gʌr	'where'	qa:r	'blanket'
ga:m	'village'	qo:m	'nation'
žʌga·	'daily'	niqa:p	'veil'
berga	'stick'	dʌrqa:s	'petition'

4.2.1.32. Voiced velar stop [g] and voiceless postvelar fricative [χ].

goma·	'first'	χorma·	'datepalm'
go·	'head'	χo	'bitter'
gʌcuga·	'how'	χʌčʌr	'mule'
gonpa·	'Buddhist temple'	χombu·	'deep'
şcugu·	'nut'	bʌχo·	'cave'

4.2.1.33. Voiced velar stop [g] and voiced postvelar fricative [ɣ].

ga·	'which'	ɣa·	'five'
gʌlgi	'shoulder'	ɣʌlţi·	'wrong'
gonpa·	'Buddhist temple'	ɣon	'melon'
agʌr	'if'	oɣuţ	'deaf'
jʌga·	'place'	zʌɣʌm	'wound'
zugu·	'finger'	cʰ oɣo·	'big'

4.2.1.34. Voiced velar stop [g] and voiceless glottal fricative [h].

gonḍa·	'a kind of cap made up of skin'	hendʌq	'terrace'
goţ	'loss'	hʌţkʌŗi·	'handcuff'
gʌmla·	'pot for plant'	hʌmla·	'attack'
gʌnti·	'bell'	hʌndʌŋ	'dumb'
ciga·	'to someone'	biha·	'locust'
hegmʌţ	'courage'	lehmo	'right'

4.2.1.35. Voiceless aspirated velar stop [kʰ] and voiceless postvelar stop [q].

kʰʌp	'seedle'	qʌbzaˑ	'hinge'
kʰʌtiˑ	'basket'	qaːʈil	'murderer'
kʰʌr	'palace'	qaːr	'blanket'
berkʰaˑ	'stick'	ɖʌrqaːs	'petition'
tikʰaˑ	'contract'	niqaːp	'veil'

4.2.1.36. Voiceless aspirated velar stop [kʰ] and voiceless postvelar fricative [χ].

kʰoˑ	'he/she'	χoˑ	'bitter'
kʰʌtiˑ	'saliva'	χotuˑ	'hut'
kʰʌrbaˑ	'bell metal'	χʌrčaˑ	'allowance'
coŋkʰur	'bargain'	boχaːr	'fever'
šoqbukʰʌŋ	'library'	aχon	'preceptor'

4.2.1.37. Voiceless aspirated velar stop [kʰ] and voiced postvelar fricative [ɣ].

kʰiriˑ	'your'	ɣir	'stallion'
kʰon	'enmity'	ɣon	'melon'
kʰʌp	'seedle'	ɣʌpču	'fifty'
kʰaˑ	'mouth'	ɣaˑ	'five'
tikʰaˑ	'contract'	pʰoɣon	'spoon'
bʌkʰʌŋ	'cowshed'	pʌɣʌm	'tomato'

4.2.1.38. Voiceless aspirated velar stop [kʰ] and voiceless glottal fricative [h].

kʰiˑ	'dog'	hiuˑ	'blue precious stone found in Ladakh'
kʰilkʰʌn	'curved'	hili	'noise'

kʰol	'sick'	holto·	'grief'
kʰʌti·	'saliva'	hʌti·	'market'
kʰʌrkʰʌr	'honest'	hʌrkʌʈ	'moment'
šoqbukʰʌɲ	'library'	dʌha:na·	'post office'

4.2.1.39. Voiceless postvelar stop [q] and voiceless postvelar fricative [χ].

qo:m	'nation'	χo·	'bitter'
qʌbza·	'hinge'	χʌbʌrɖa:r	'careful'
qa:r	'blanket'	χʌčʌr	'mule'
ʈʰʌqpa·	'rope'	bʌχmo·	'bride'
brʌqčʰa·	'echo'	biχo·	'locust'
arʌq	'essence'	mʌriχ	'mars'

4.2.1.40. Voiceless postvelar stop [q] and voiced postvelar fricative [ɣ].

qa:r	'blanket'	ɣa·	'five'
qʌlʌm	'pen'	ɣʌlʈi·	'wrong'
qo:m	'nation'	ɣom	'hole'
qʌbza·	'hinge'	ɣʌpču·	'fifty'
dʌqčuŋ	'beans'	nʌɣzer	'ray'
kyʌqkʰor	'vulture'	smyʌɣra·	'beard'

4.2.1.41. Voiceless postvelar stop [q] and voiceless glottal fricative [h].

qoɖrʌʈ	'nature'	hʌʈkʌɽi·	'handcuff'
qʌlʌm	'pen'	hʌlwa:yi·	'confectioner'
qa:r	'blanket'	ha:r	'garland'
ʈʰʌqpa·	'rope'	lehmo·	'right'
brʌqčʰa·	'echo'	sʌrhʌʈ	'boundary'
kʌqpa·	'imprisonment'	biha:	'locust'

4 2.2. Affricates

4.2.2.1. Voiceless alveolar affricate [c] and voiceless aspirated alveolar affricate [cʰ].

cele·	'a kind of insect'	cʰele·	'hut'
coŋ	'onion'	cʰoŋ	'trade'
conmo·	'wife of the slave'	cʰonma·	'vegetable'
ace·	'paternal uncle'	acʰe·	'wife's elder brother'
pice·	'rat'	bucʰa·	'boy'
mʌlca·	'place'	ŋʌlcʰua·	'rest'

4.2.2.2. Voiceless alveolar affricate [c] and voiceless palatal affricate [č].

cʌqpa·	'till'	čʌqpa·	'robber'
coŋ	'onion'	čoŋʌs	'twelve'
cukse·	'putting something on the floor'	čukse·	'shut'
pice·	'rat'	čuču·	'nipple'
lʌqcuks	'tree'	dʌqčuŋ	'beans'

4.2.2.3. Voiceless alveolar affricate [c] and voiced palatal affricate [j].

ceroq	'suspicion'	jernʌl	'general'
cukse·	'putting something on the floor'	junup	'south'
cʌŋɖʌn	'sandal'	jʌnda·	'flag'
pice	'rat'	ka:ju·	'cashewnut'
kucur	'latch'	rʌjʌp	'birth day of Hazarat Ali'

4.2.2.4. Voiceless alveolar affricate [c] and voiceless aspirated palatal affricate [č^{h}].

conmo·	'wife of the slave'	č^{h}onma·	'sharp'
cʌqpa·	'till'	č^{h} ʌq	'fodder'
co	'onion'	č^{h} on	'false'
amʌce·	'mother's younger sister'	amʌč^{h} o·	'mother's elder sister'
ace·	'paternal uncle'	ač^{h} e·	'brother's wife'

4.2.2.5. Voiceless alveolar affricate [c] and voiceless alveolar fricative [s].

con	'slave'	son	'seed'
ceroq	'suspicion'	serpo·	'pale'
cʌqpa·	'till'	sʌq	'all'
cenu·	'pajama'	senmo·	'fingernail'
pice·	'rat'	p^{h} oso·	'pride'
lʌqcuks	'tree'	kyoqse·	'teapoy'

4.2.2.6. Voiceless aspirated alveolar affricate [c^{h}] and voiceless alveolar fricative [s].

c^{h} on	'wound'	son	'seed'
c^{h} a·	'salt'	sa·	'ground'
c^{h} o·	'lake'	so·	'tooth'
c^{h} otok	'island'	sotol	'powder'
buc^{h} a·	'boy'	p^{h} oso·	'pride'
č^{h} uc^{h} ik	'drought'	posum	'three-fourth'

4.2.2.7. Voiceless aspirated alveolar affricate [cʰ] and voiceless palatal affricate [č].

cʰiks	'joint'	čik	'one'
cʰo·	'grandson'	čo·	'emperor'
cʰʌqpa·	'until'	čʌqpa·	'robber'
cʰa·	'salt'	ča·	'tea'
kʰʌmcʰul	'the position of keeping the lower and upper lips in closing position'	gramčʌq	'slap'
bucʰa·	'boy'	čuču·	'nipple'

4.2.2.8. Voiceless aspirated alveolar affricate [cʰ] and voiceless aspirated palatal affricate [čʰ].

cʰonma·	'vegetable'	čʰonmo·	'sharp'
cʰon	'wound caused by knife'	čʰon	'false'
cʰʌr	'garden'	čʰʌrpa·	'rain'
bucʰa·	'boy'	ačʰe·	'elder sister'
ŋʌlcʰua·	'rest'	krelčʰukpa·	'insult'
kʰʌmcʰul	'the position of keeping the lower and upper lips in closing position'	ʈʌŋčʰhu·	'gum'

4.2.2.9. Voiceless aspirated alveolar affricate [cʰ] and voiced palatal affricate [j].

cʰo·	'grandson'	jo:š	'spirit'
cʰʌn	'night'	jʌngi·	'mosquito'
cʰele·	'hut'	jernʌl	'general'

cʰʌŋʌya·	'twin'	jʌŋgʌl	'forest'
čʰucʰik	'drought'	rʌjʌp	'birthday of Hazarat Ali'
bucʰa·	'boy'	ka:ju·	'cashewnut'
norcʰa·	'pasture'	orjʌn	'milk'

4.2.2.10. Voiceless palatal affricate [č] and voiced palatal affricate [j].

čo·	'emperor'	jo:š	'spirit'
čumka·	'lark'	junup	'south'
čʌn̪da·	'pocket'	jʌngi·	'mosquito'
čʌču·	'bird'	ɣʌñjʌr	'naked'
purča·	'peg'	orjʌn	'milk'

4.2.2.11. Voiceless palatal affricate [č] and voiceless aspirated palatal affricate [čʰ].

čʌq	'break (tr)'	čʰʌq	'break (intr)'
čʌrpa·	'cot'	čʰʌrpa·	'rain'
čiya·	'why'	čʰima·	'tears'
čuksum	'thirteen'	čʰukʌr	'narrow necked pitcher'
brʌqča·	'cut'	brʌqčʰa	'echo'
meṭče·	'flame'	şmulčʰu	'mercury'

4.2.2.12. Voiceless palatal affricate [č] and voiceless alveolar fricative [s].

čiya·	'why'	siya· serpo·	'chickenpox'
čena·	'gram'	senmo·	'fingernail'

čukma·	'lark'	sum	'three'
čo·	'emperor'	so·	'tooth'
čomo·	'nun'	soma·	'new'
tukču·	'sixty'	ʈʰʌmspa·	'wrestling'

4.2.2.13. Voiced palatal affricate [j] and voiceless aspirated palatal affricate [čʰ].

jin	'giant'	čʰ inma·	'liver'
jo:š	'spirit'	čʰ os	'religion'
jennʌʈ	'heaven	čʰ espa·	'dear'
jurma:na·	'fine'	čʰ uruʈ	'flood'
ka:ju·	'cashewnut'	ačʰ e·	'elder sister'
rijʌp	'birthday of Hazarat Ali'	rinmočʰe·	'gem'

4.2.2.14. Voiced palatal affricate [j] and voiceless alveolar fricative [s].

jin	'giant'	si:n	'scene'
jennʌʈ	'heaven'	senmo·	'fingernail'
jernʌl	'general'	ser	'gold'
jʌlʈa·	'advice'	sʌla:ʈ	'salad'
ja:hil	'ignorant'	sa:hil	'coast'
kʌñju:s	'miser'	kʌnsir	'girdle'
ʈa:j	'crown'	bʌs	'bus'

4.2.2.15. Voiceless aspirated palatal affricate [čʰ] and voiceless alveolar fricative [s].

čʰ u·	'water'	su·	'who'
čʰ on	'idle'	son	'seed'

čʰʌq	'fodder'	sʌq	'all'
čʰilmvq	'phlegm'	sil	'shade'
čʰuruṭ	'deluge'	surup	'ring'
čʰʌrpa'	'rain'	serpo'	'pale'

4.2.3. Fricatives

4.2.3.1. Voiceless alveolar fricative [s] and voiced alveolar fricative [z].

senmo'	'fingernail'	zermo'	'pain'
sumpa'	'third'	zumba'	'smile'
sʌmba'	'intention'	zʌmba'	'bridge'
soba'	'province'	zorba'	'sickle'
pʰoso'	'pride'	rozi' iːṭ	'day of sacrifice'
ṭʌsma'	'lace'	ṭʌzbi'	'rosary'

4.2.3.2. Voiceless alveolar fricative [s] and voiceless retroflex fricative [ṣ].

spulu'	'feather'	ṣpukma'	'shoulder'
sposkʌr	'incense'	ṣpon	'painter'
sṭon	'autumn'	ṣṭen	'sling'
sṭʌqbu'	'tiger's cub'	ṣṭʌqsbu'	'mane'
sṭʌnpo'	'patient'	ṣṭʌnpo'	'passion'
skuṭpa'	'thread'	ṣkeṭpa'	'waist'

4.2.3.3. Voiceless alveolar fricative [s] and voiceless palatal fricative [š].

siŋ	'all'	šiŋ	'wood'
sa'	'ground'	ša'	'meat'

serpo·	'yellow'	šerpa·	'wet'
solba·	'coal'	šorba·	'soup'
pensil	'pencil'	penšin	'retire'
pʰ osə·	'pride'	pišu·	'fly'

4.2.3.4. Voiceless alveolar fricative [s] and voiced palatal fricative[ž].

siŋ	'all'	žiŋ	'field'
sʌq	'all'	žʌq	'day'
serpo·	'yellow'	žerba·	'blind'
pensil	'pencil'	skenžuks	'embrace'
esʌq	'other'	ažʌŋ	'maternal uncle'
pʰ oso·	'pride'	zgožiŋ	'hearth'

4.2.3.5. Voiceless palatal fricative [š] and voiced palatal fricative [ž].

šiŋ	'wood'	žiŋ	'field'
šerba·	'people'	žerba·	'blind'
šol	'plough'	žoli·	'broom'
šʌk	'doubt'	žʌq	'day'
rišim	'silk'	zgožiŋ	'hearth'
penšin	'retire'	skenžuks	'embrace'

4.2.3.6. Voiceless palatal fricative [š] and voiceless retroflex fricative [ṣ].

ša·	'meat'	ṣta·	'horse'
šwa·	'boil'	ṣna·	'ear'
ša:l	'shawl'	ṣca·	'nerve'
šik	'louse'	ṣcikpa·	'wall'
šel	'glass (raw)'	ṣten	'sling'

šʌŋspa·	'state of loosing fragrance'	şcʌŋspa·	'purify

4.2.3.7. Voiced palatal fricative [ž] and voiced alveolar fricative [z].

žimbo·	'sweet'	zima·	'violet'
žugi·	'lost'	zugu·	'finger'
že·	'penis'	ze·	'leprosy'
ažʌŋ	'maternal uncle'	izʌt̪	'respect'
zgožiŋ	'hearth'	mo:zi·	'sulphur'

4.2.3.8. Voiceless postvelar fricative [χ] and voiced postvelar fricative [ɣ].

χa·	'anger'	ɣa·	'five'
χo·	'bitter'	ɣom	'hole'
χorma·	'datepalm'	ɣoršiŋ	'churning rod'
boχa:r	'fever'	pʰoɣon	'spoon'
aχon	'preceptor'	oɣut̪	'dumb'

4.2.3.9. Voiceless postvelar fricative [χ] and voiceless glottal fricative [h].

χa·	'anger'	ha·	'yawn'
χorma·	'datepalm'	holto·	'grief'
χʌmloq	'dirty'	hʌmla·	'attack'
boχa:r	'fever'	borha·	'veil'
aχon	'preceptor'	mʌhe·	'bison'
χʌrχʌtu·	'ant'	sʌrhʌt̪	'boundary'

4.2.3.10. Voiced postvelar fricative [ɣ] and voiceless glottal fricative [h].

ɣa·	'five'	ha·	'yawn'

ɣir	'stallion'	his	'breath'
ɣʌlt̪i·	'wrong'	hʌlwa:yi·	'confectioner'
t̪ʌɣʌðir	'by chance'	t̪ʌhʌt̪	'throne'

4.2.4. Nasals

4.2.4.1. Bilabial nasal [m] and dental nasal [n̪].

nomo·	'husband's sister'	gon̪de·	'yesterday'
nima·	'sun'	čʌn̪da·	'pocket'
amen	'peace'	men̪doq	'flower'
d̪rʌnmo·	'bear'	bʌn̪d̪ʌrga·	'port'
t^{h}ika· lenma·	'contract'	cʌn̪d̪ʌn	'sandal'
demʌ	'trunk (of tree)'	d̪ʌn̪d̪ʌl	'sieve'

4.2.4.2. Bilabial nasal [m] and alveolar nasal [n].

mon	'player (drumbeater)'	nono·	'husband's brother (younger)'
mʌqpa·	'son-in-law'	nʌqpo·	'black'
ñima·	'sun'	nina·	'then'
nomo·	'husband's sister'	nono·	'husband's brother'
ɣom	'hole'	ɣon	'melon'
brom	'stout'	brʌn	'subjects of a king'

4.2.4 3. Bilabial nasal [m] and palatal nasal [ñ].

mirgi·	'epilepsy'	ñima·	'sun'
member	'member'	ñembo·	'through'
mʌlca·	'place'	ñʌlba·	'lie down and sleep'
mʌzbu:t̪	'strong'	ñuzuʝs	'fisherman'

ɖrʌnmo·	'bear'	kʌñju:s	'miser'
ama·	'mother'	aññčʌr	'pickle'

4.2.4.4. Bilabial nasal [m] and velar nasal [ŋ].

mon	'player (drum beater)'	ŋon	'publicity'
mi·	'man'	ŋi·	'my'
mʌr	'butter'	ŋʌr	'boasting'
smyʌŋ	'plinth'	sŋyʌqs	'music'
ṣma:mu	'low'	ṣŋa:boŋ	'camel'
brom	'stout'	broŋ	'castrate'
nʌm	'sky'	nʌŋ	'house'

4.2.4.5. Alveolar nasal [n] and dental nasal [n̪].

čʌtni·	'chutney'	cʌn̪ɖra:l	'Monday'
gʌnta·	'hour'	gon̪ɖa·	'yesterday'
gʌnti·	'bell'	gʌn̪ɖʌk	'sulphur'
menma·	'except'	min̪ɖuk	'be not'
mʌnpa·	'fog'	men̪ɖoq	'flower'
yen̪ɖri·	'spinning wheel'	yeŋna·	'out of'

4.2.4.6. Alveolar nasal [n] and palatal nasal [ñ].

nina·	'then'	ñima·	'sun'
nene·	'paternal uncle'	ñinse·	'little'
noq	'dim'	ñoʈi·	'guava'
na·	'and'	ñya·	'fish'
nʌɣzbrul	'python'	ñʌɣzer	'ray'
gonča·	'cloth'	aññčʌr	'pickle'
ñenca·	'can'	meññča·	'vulgar'

4.2.4.7. Alveolar nasal [n] and velar nasal [ŋ].

naˑ	'and'	ŋaˑ	'I'
nʌs	'barley'	ŋʌs	'I'
nʌrʌs	'nurse'	ŋʌrʌŋ	'myself'
sniŋ	'heart'	sŋiˑ	'wish'
şkʌn	'palate'	şkʌŋ	'leg'
brʌn	'subjects of a king'	brʌŋ	'chest'
pʰʌn	'recovery from illness'	pʰʌŋ	'spindle'

4.2.4.8. Palatal nasal [ñ] and velar nasal [ŋ].

ñʌlbaˑ	'lie down and sleep'	ŋʌlbaˑ	'tired'
ñimaˑ	'sun'	ŋimaˑ	'near'
ñermaˑ	'long pepper'	ŋʌrmaˑ	'sweet'
añčʌr	'pickle'	aŋgaːruˑ	'Tuesday'
sñermaˑ	'chilly'	sŋezbol	'pillow'
sñyʌšiŋ	'yoke'	sŋyʌqs	'music'

4.2.5. Laterals

4.2.5.1. Alveolar lateral [l] and voiceless alveolar fricativized lateral [ɬ].

limik	'key'	ɬɪiyaˑ	'navel'
lomaˑ	'leaf'	ɬtʌnmo. tʌŋkʰʌn	'actor'
laˑ	'pass'	ɬtwaˑ	'belly'
loɣʌt	'dictionary'	ɬtoʰs	'hungry'
lzoɬ	'new moon'	ɬčorbaˑ	'worship'
melʌn	'tongs'	mcɬčʰeˑ	'flame'

4.6.2. Flaps

4.2.6.1. Alveolar flap [r] and retroflex flap [ɽ].

pʌri·	'a kind of wooden vessel'	beɽa·	'instrument (music) player'
pirič	'saucer'	pʰ oɽiyʌŋ	'widower'
ʈuru·	'spindle'	gʌɽi·	'clock'
ʈʰ uru·	'colt'	saːɽi·	'sari'
pʰ orʌq	'raven'	ʈʰ aːɽi yaːŋs	'marsh'
ara·	'saw'	hʌʈkʌɽi·	'handcuff'

4.2.6.2. Retroflex flap [ɽ] and voiceless alveolar stop [t].

hʌʈoːɽa·	'hammer'	hʌtipa·	'shopkeeper'
saːɽi·	'sari'	kʰ aːti·	'basket'
gʌɽi·	'clock'	baːɬti·	'bucket'
hʌʈkʌɽi	'handcuff'	pʌtsʌn	'jute'
pʌkoːɽa·	'pakoda'	lʌlten	'lantern'
baɽa·	'instrument (music) player'	pʌtʌq	'herb'

4.2.6.3. Retroflex flap [ɽ] and voiced alveolar stop [d].

pʰ oɽiyŋ	'widower'	tʌbʌrindi· lʌqcuks	'tamarind-tree'
hʌʈoːɽa·	'hammer'	gonda·	'cap made up of skin'
gʌɽi·	'clock'	gʌnduru·	'gullet'
cʰ ʌɽʌŋ	'sympathy'	čena:da:l	'horsegram'
ʈʰ aːɽi yaːŋs	'marsh'	šŋenduŋ	'relatives'

4.2.7. Semivowels

4.2.7.1. Bilabial semivowel [w] and palatal semivowel [y].

wʌce·	'fox'	yoce	'left-handed'
wʌqs	'time'	yoq	'earth'
wʌn	'pumpkin'	yʌŋ	'again'
wʌja·	'cause'	yoɣa·	'under'
wa:ris	'descendants'	ya:kuţ	'ruby'
cʰowo·	'great'	čiya·	'why'
swi·	'whose'	syu·	'pomegranate'

5. AN INVENTORY OF BALTI PHONEMES

5.1. Vowels

There are forty-three segmental phonemes of which ten are vowels and thirty-three are consonants. These are obtained from the sounds given in the preceding chapter on the basis of contrast, *i.e.* whether they make otherwise identical words distinct by their presence. The phonemic inventory of vowel phonemes is given below.

	Front		Central		Back	
High	i	i:			u	u:
Highermid	e	e:			o	o:
Low			a	a:		

All the long vowel phonemes have only one allophone each. The long vowel occurs in the initial and medial positions but not in the final position (with the exception of *e*: and u;). The short vowel phonemes have two allophones each (with the exception of *e*, *o* and *a*). The short vowel occurs initially and medially but not finally. The medium long vowels shown by single dot occur in the final position only. These vowels do not occur either in the initial position or in the medial position. The short vowel phonemes *e*, *o* and *a* have three allophones each. On the basis of complementary distribution the lower mid front unrounded short vowel [ɛ] is grouped under /e/ the lowermid back rounded short vowel [ɔ] is grouped under /o/ and the lowermid back unrounded short vowel [ʌ] is grouped under /a/.

The following table gives in detail the allophonic distribution of these vowel phonemes.

Phonemes	Allophones	Allophonic Distribution		
		Initial	Medial	Final
/i/	[i]	+	+	—
	[i·]	—	—	+
/i/	[i:]	+	+	—
/e/	[e]	+	+	—
	[e·]	—	—	+
	[ɛ][1]	+	—	—
/e:/	[e:]	—	+	—
/a/	[a]	+	—	—
	[a·]	—	—	+
	[ʌ]	—	+	—
/a:/	[a:]	+	+	—
/u/	[u]	+	+	—
	[u·]	—	—	+
/u:/	[u:]	—	+	—
/o/	[o]	+	+	—
	[o·]	—	—	+
	[ɔ][2]	+	—	—
/o:/	[o:]	+	+	—

5.2. Consonants

The inventory of consonant phonemes is given below.

Stops	p	b		ʈ	ɖ		t	d				k	g	q	
	p^h			$ʈ^h$			t^h					k^h			
Affricates							c			č	j				
							c^h			$č^h$					
Fricatives		(f)					s			š			x		h
							z			ž			ɣ		
Nasals	m						n			ñ		ŋ			
Leterals							l								
Flaps							r								
Semivowels	w									y					

The following chart gives a clear picture of the allophonic distribution of cosonant phonemes.

Phonemes	Allophones	Allophonic Distribution		
		Initial	Medial	Final
/p/	[p]	+	+	+
/b/	[b]	+	+	—
/p^h/	[p^h]	+	+	—
/ṭ/	[ṭ]	+	+	+
/ḍ/	[ḍ]	+	+	—
	[ð][3]	—	+	—
/$ṭ^h$/	[$ṭ^h$]	+	+	—
/t/	[t]	+	+	+
/d/	[d]	+	+	(+)
	[ɾ][4]	—	+	—
/t^h/	[t^h]	+	+	—
/k/	[k]	+	+	+
/g/	[g]	+	+	—
/k^h/	[k^h]	+	+	—
/q/	[q]	+	+	+
/c/	[c]	+	+	—
/c^h/	[c^h]	+	+	—
/č/	[č]	+	+	+
/ǰ/	[ǰ]	+	+	—
/$č^h$/	[$č^h$]	+	+	—
/f/	[f]	+	+	—
/s/	[s]	+	+	+
/z/	[z]	+	+	—
/š/	[ṣ][5]	+	+	—
	[š]	+	+	+
/ž/	[ž]	+	+	—
/x/	[x]	+	+	+
/ɣ/	[ɣ]	+	+	—
/h/	[h]	+	+	—
/m/	[m]	+	+	+
/n/	[ṉ][6]	—	+	—
	[n]	+	+	+

Phonemes	Allophones	Allophonic Distribution		
		Initial	Medial	Final
/ñ/	[ñ]	+	+	–
/ŋ/	[ŋ]	+	+	+
/l/	[l]	+	+	+
	[ɬ]$^{?}$	+	+	–
/r/	[r]	+	+	+
/w/	[w]	+	+	–
/y/	[y]	+	+	–

NOTES

1. [ɕ] is as an allophone of /e/ occurring in disyllabic words in the initial position when /a/or/a :/ follows in the next syllable. *E.g.* [ɕla:č] 'remedy' [ɕqra : r] 'confession' and [ɕka˙] 'there'.

2. [ɔ] occurs as an allophone of /o/ in disyllabic words initially. /a/ follows in the next syllable. Only one example is found in the whole data. *E.g.* [ɔma˙] 'curds'.

3. [ð] is an allophone of [d̪]. It occurs intervocalically *i.e.* in between two vowels, *e.g.* [ba:ðem] 'almond', [pya:ða˙] 'infantry', [aðit̪] 'Sunday' etc.

4. [ṛ] is an allophone of [d] occurring medially in between two vowels. *e.g.* [cʰʌṛʌŋ] 'sympathy', [gʌṛi˙] 'clock', [pʰoṛiyʌŋ] 'widower' etc.

5. [ʂ] is an allophone of /š/. It occurs before a consonant. *E.g.* [ʂponɻ 'painter' [ʂt̪en] 'sling' [ʂpukma˙] 'shoulder', etc.

6. [n̪] is an allophone of /n/ occurring before a dental stop. *E.g.* [gon̪d̪e.] 'yesterday', [men̪d̪oq] 'flower', [čʌn̪d̪a˙] 'pocket', etc.

7. [ɻ] is an allophone of /l/. It occurs initially when a voiceless consonant follows, *e.g.*, [ɻt̪wa˙] 'belly', [ɻʰt̪oʰs] 'hungry', [meɻčʰe] 'flame', etc.

6. GRAPHEMIC REPRESENTATION

6.1. General Remarks

In Chapter 5, we gave the inventory of vowel phonemes and consonant phonemes with their distribution. From the phonetic inventory given in Chapter 3, we know that there are 18 vowel sounds and 39 consonant sounds. But in Chapter 5, there are 10 vowel phonemes and 33 consonant phonemes. It is clear from this that there are principles by which the significant sounds of a language can be determined. The significant sounds or functional units at the sound level of a language are called the PHONEMES of that language.

The principles of discovering the significant sounds may be discussed here briefly before going into the question how best the Devanāgarī script can be used for this language. Some phonetically similar sounds occur in predictable environment. Since they are predictable, it is sufficient to group them and provide symbol to represent them. The individual phon if variations of this symbol can be obtained from the places of its occurrence. These symbols will contrast with other such symbios. That is, they will occur in the same environment and the choice of one or the other will change the meaning of the word. These and only these symbols called phonemes need to be given written symbol in an ideal and efficient script system. One motivation for discovering the phonemes of a language thus is to devise a script for the language. This is essential for a language which has no writing system. The phonemic analysis is thus necessary for providing to a language a permanent visual representation which is unambiguous and related to the phonetic data by straightforward rules.

6.2. Devanagari Script for Balti

6.2.1. Vowels

In Balti, there are ten vowel phonemes of which five are short and five are long. There is no difficulty to represent the vowel phonemes of Balti by Devanāgarī script except short o and e. For these two vowels, symbols ऍ and ऑ may be used following the suggestions made in Parivardhit Devanāgarī. Thus the vowel phonemes of Balti may be represented by the following symbols of the Devanāgarī script.

a	a:	i	i:	u	u:	e	e:	o	o:
अ	आ	इ	ई	उ	ऊ	ऍ	ए	ऑ	ओ

6.2.2. Consonants

In the consonants there is no problem regarding the stops except for the postvelar q. This may be represented by the symbol क़ i.e. the symbol for the velar stop with a dot below. Thus the following Devanāgarī symbols represent the stop phonemes of Balti.

pa	ba	ṭa	ḍa	ta	da	ka	ga	qa
प	ब	त	द	ट	ड	क	ग	क़

p^ha	t^ha	t^ha	k^ha
फ	थ	ठ	ख

Among the affricates, there is no symbol in Devanāgarī to represent the alveolar *c* and c^h. The palatal č, $č^h$ and j may be represented by the regular Devanāgarī symbols. The alveolar affricates, then, may be represented with a dot below the palatal affricate symbols. Thus च़ and छ़ will be for alveolar affricates[3].

ča	$č^h$a	ja	ca	c^ha
च	छ	ज	च़	छ़

The symbols स, श and ह are available in Devanāgarī to represent the Balti fricatives s, š and *h* respectively. For the rest of the sounds modification of the Devanāgarī symbol is neccessary. The labio-dental fricative /f/ can be represented by the symbol फ with a dot *i.e.* फ़. Similarly *z* can be represented as ज़. In the fricative series, there is no symbol to represent ž, *x* and ɣ. For ž, the symbol झ़ may be used. For x and ɣ, the symbols ख़ and घ़ may be used. Thus all the phonemes in the fricative series can be represented by the Devanāgarī symbols.

There is no problem in finding symbols for the nasal phonemes. In Balti, there are four nasal phonemes and each can be represented by the existing Devanāgarī symbols without any modification.

ma	na	ña	ŋa
म	न	ञ	ङ

There is only one lateral phoneme in Balti which can be conveniently represented by the symbol ल. For the flap *r* and the semivowels *w* and *y*, the existing symbols र, व and य can be used without any difficulty.

Regarding the consonant clusters, the pure consonants may be written with *halant* as already used with some clusters in Hindi. The use of conjunct letter may thus be completely dispensed with in Balti, which will facilitate typing and printing.

Given below is the suggested alphabet of Balti.

Vowels

a	a:	i	i:	u	u:	e	e:	o	o:
अ	आ	इ	ई	उ	ऊ	ए	ए	ऑ	ओ

ma:tra:s : ◌ा, ◌ि, ◌ी, ◌ु, ◌ू, ◌े, ◌ै, ◌ो, ◌ौ

Consonants

ka	k^ha	ga	qa	ŋa
क	ख	ग	क़	ङ
ča	$č^ha$	ja	ña	
च	छ	ज	ञ	
ca	c^ha			
च़	छ़			
ṭa	$ṭ^ha$	ḍa	ṇa	
त	थ	द	न	
ta	t^ha	da[4]		
ट	ठ	ड		
pa	p^ha	ba	ma	
प	फ	ब	म	

ya	ra	la	wa	sa	ša	za	ža
य	र	ल	व	स	श	ज़	झ़
xa	ɣa	ha					
ख़	घ	ह					

6.3. A Problem

There is one problem from the point of view of the Hindi speakers in using the Devanāgarī script for the Balti language. In the Hindi words, the final *–a* is not pronounced. But in Balti, it is pronounced. For example, the Balti words written in the Devanāgarī script अम 'mother', अत 'father' and पाच़ 'king' should be pronounced like *ama*, *ata* and *pa:ca*. But the

Hindi speakers will read them as *am*, *at* and *pa:c*. There are two solutions to this problem. The Balti words may be represented as अमा, अता and पाचा with a final long vowel. This does not distort the phonetics of Balti since the final vowels in this language have duration between the short and long vowel. If the final medium length vowels are treated as the allophones of the long vowels, instead of the short vowels as has been done, this representation will be based on the phonology of Balti. If this solution is preferred, not only final /a/ but all other final vowels also should be represented by the Devanāgarī symbols for long vowels for the sake of uniformity. (The pure consonants in the final position then will be written with the symbols for the consonants with short /a/.) Another solution would be to represent the above words as अम, अत and पाच and mark the words which end in pure consonants with *halant* as म्, त्, च् etc. Thus words like *paṭʰar* 'floor', *pa:pat* 'papad', *pʰiran* 'apron', etc , will be represented as पथ्र्, पापट्, फिरन् etc. The use of *halant* may be followed to represent the consonant clusters also as is done with some clusters in the Devanāgarī writing system. The second solution is preferred over the first one. Since the *halant* is already used in the Devanāgarī writing system it will be used in Balti to represent the pure consonant in consonant clusters also. Moreover this solution will not warrant a change in the present analysis of phonology in order to follow a writing convention in Hindi.

6.4. Sample Representation of Balti words in Devanagari Script

6 4.1. Vowels

Phoneme	Grapheme	Words	Meaning
a:	अ	अपि	grandmother
a:	आ	अमू	mango
i	इ	इजत्	respect
i:	ई	ईदुल क़दिर	Day-Hazarat Ali got hilafat.
u	उ	उसताद्	master
u:	ऊ	तमूबूर	tambura

Phoneme	Grapheme	Words	Meaning
e	ऍ	ऍसक्	other
e:	ए		
o	ऑ	ऑत्	light
o:	ओ	ओट्	vote

6.4.2. Consonants

ka	क	कक	elder brother
k^{h}a	ख	खप्	seedle
ga	ग	गोॅ	head
qa	क़	क़ार्	blanket
ŋa	ङ	ङर्	boasting
ča	च़	चचु	bird
č^{h}a	छ	छङ्गु	club-foot
ja	ज	जबल्	crowbar
ña	ञ	ञलब	lie down and sleep
ca	च़	च़क़प	till
c^{h}a	छ़	छ़न्	night
ṭa	त	तलाक़	divorce
ṭ^{h}a	थ	थमोॅ	war
ḍa	द	दरज़ी	tailor
na	न	नम्	sky
ta	ट	टकि	bread
t^{h}a	ठ	ठकूर्	barber
da	ड	डइन	post office
pa	प	पटक्	herb (medicinal)
p^{h}a	फ	फलि	shield

ba	ब	बल्	wool
ma	म	मन्दर्	temple
fa	फ़	काफ़ि	coffee
ya	य	य	or
ra	र	रु	wind
la	ल	लम्	path
wa	व	वन्	pumpkin
sa	स	समर्	kerosene
ša	श	शक्	doubt
za	ज़	ज़न्	food ; dish
ǯa	झ़	झ़क्	day
x̣a	ख़	ख़ो	bitter
ɣ̣a	घ़	घ़	five
ha	ह	हरिप्	trumpet

6.4.3 Clusters

–pd–	—पूद—	चुपूदुन्	'seventeen'
–pn–	—पून—	रूग्कपून	'after'
–bg–	—ब्ग—	चोॅबगेॅत्	'eighteen'
–tm–	—त्म—	झु.त्मर	'ghee'
–ts–	—ट्स—	पट्सन्	'jute'
–kp–	—क्प—	उक्प	'owl'
–gs–	—ग्स—	दुग्स	'hermitage'
–qt–	—क्त—	तक्तपोश	'couch'
–f̣t–	—फ़्त—	अफ़्त	'week'
–sm–	—स्म—	तस्म	'lace'
–šm–	—श्म—	दूश्मन्	'enemy'
–hm–	—ह्म—	लॅह्मा	'right'

–mp–	—म्प—	बुरुम्प	'small pox'
–np–	—न्प—	बुलेॅन्प	'debtor'
–ŋp–	—ङ्प—	तङ्प लक्.प	'right hand'
–lk–	—ल्क—	पाल्कि	'palanquin'
–rd–	—र्द—	कुर्दोस	'lock'
–kby–	—क्ब्य—	शक्ब्य	'doubt'
–stw–	—स्त्व—	सकमब्रोस्त्व	'hay'
–msp–	—म्स्प—	स्कोॅम्स्प	'thirst'
–ŋsl–	—ङ्स्ल—	ङङ्स्ल	'day after tomorrow'
–rby–	—र्बय—	स्तारबय	'disappear'
–gzby–	—ग्ज्ब्य—	फुरुलुग्ज्.ब	'try'
–mshl–	—म्स्ह्ल—	ज़ुग्.रुम्स्ह्ल	'ballad'
–ŋzby–	—ङ्ज्ब्य—	ह्लिङ्ज्बय	'hunt'

6.5. Sample Text

ङक्शिगि झघ् खोॅङ् मिङ्ग डिम् योॅत्चुक्। मलॅच्ग अलॅन दुक्स्। अलं दुक्संन तचि बस्। समब लङॅन ज़ग्रुम्स् तङॅन् ह्लु तड़ॉन चिक्चिग् सपॅर तड़ॅन् दुक्स्। नमलङ्स् छॉइन्चिगन गॉसूलक्स् गॉनंन खांङ डित् ङिन् ङ्मन् चियांबस्।योॅङ्स्। च़न्लन एं झुक्पिक शिक्स्प्रुक्स्। स्प्क्पन एॅस् जॅर्सॅत्। ब, खॅरस् चि बॅत्? ङन सिगिस् ज़ॅत् दॅकन स्प्रुगॅत् ज़ॅरॅत्लोॅ। ब, ङ्यु चि बसॅ इन् ङ्यु ङि झुक्पु स्प्क्सॅ खिरि झुक्पु स्पुरुगङ्। ब, खिरि इन दि झ़क्पु ङि मन? ब, ङ्युन ङि इन्। ङि झु.क्पु गॅर ज़ॅरॅन लङ्सॅन च्लसुक्। च्न्पु झुक च़लन् दुक्सुक्। मन मतप् सुक्। मथो ब होल्टॅइक सुक्। बनचिक्च़न खोॅ मकि झिङ् चिगियङ् साङ स दुक्सुक्। मकि शिङ् चिक् खोॅएं झुक्पुअ सोॅङ् जुक्सुक् य, बय डियु दिक दुक् ज़ॅर्न खोॅ दॅकं दॅक्सुक्।

6.6. Perso—Arabic Script

Balti has no script of its own for the purpose of writing. An attempt is made here to use both the Perso–Arabic and Devanagari script. There is no literature avalable in Balti which has used the Perso--Arabic script. But missionary people have translated some parts of the Bible in Balti. They have used the Roman script for this purpose. However the poets who write poems in Balti for Mushaira use the Perso-Arabic script. The introduction of this script creates many problems which are technological and pedagogical in nature. These problems are discused in later section.

6.6.1. Inventories—Vowels :

Phonemes	Graphemes	Phonemes	Graphemes
a	اَ	e	ےٚ
a:	آ	e:	اے
i	اِ	o	وٚ
i:	ای	o:	و
u	اُ		
u:	اؤ		

6.6.2. Consonants

Phonemes	Graphemes	Phonemes	Graphemes
k	ک	t̪	ت
k^h	کھ	$t̪^h$	تھ
g	گ	d̪	د
q	ق	ṭ	ٹ
ŋ	ں	$ṭ^h$	ٹھ
č	چ	ḍ	ڈ
$č^h$	چھ	n	ن
ǰ	ج	p	پ
ñ	ں	p^h	پھ
c	ﭺ	b	ب
c^h	ﭽ	m	م

Phonemes	Gramphemes	Phonemes	Graphemes
		f	ف
		y	ے
r	ر	ž	ژ
l	ل	x	خ
w	و	ɣ	غ
s	س		
š	ش	h	ه

6.6.3. Vowels

Phoneme اَ

Perso-Arabic Grapheme ـَ (above)

Allograph

Examples :

Initial	api	اَپ	'grandmother'
Medial	bam	بَم	'bomb'
Final	tasma	تَسمَ	'lace'

/a:/	آ	
	ا	
a:m	آم	'mango'
pa:ca	پاچَ	'king'
/i/	اِ	
	ـَ	(below)
izat	اِزَت	'respect'
bip	بِپ	'ferry boat'
bi	بِ	'bird'
/i:/	ای	
	(اپ)پ	
i:ḏemela:ṯ	ایدٕمٕلات	'a Muslim festival'
ṯi:l	تیل	'oil'

/u/

اُ

ـُ

usṭa :ṭ	اُسْتات	'master'
ḍunso	ڈُنسوٗ	'canine tooth'
tutu	ٹُٹُ	'throat'

/u:/

اوٗ

ـوٗ

ṭambu : r	ٹَمبوٗر	'tambura'

/e/ اَے

ـَے (above)

eksal	اَیکْسَل	'axle'
c^{h}ele	چھَلے	'hut'
c^{h}e	چھے	'soul ; life'

/e : /	اے	
	(ایہ) یہ	
be : ɣamber	بیغمبَر	'prophet
/ o /	اوٚ	
	وٚ	
oṭ	اوٚت	'light'
ṭoŋ	توٚن	'give'
beṭo	بٚتوٚ	'calf'
/o:/	او	
	و	
o:t	اوٹ	'vote'
bo:ŋbu	بوٚنبُ	'donkey'

6.6.4. Consonants

Phoneme /k/

Perso-Arabic Grapheme ک

Perso-Arabic Allograph ک

Examples

Initial	kaka	گَگ	'elder brother'
Medial	c^hok^hur	جھوکھر	'bargain'
Final	c^hamik	جھَمِک	'great grandson'
	/k^h/	کھ	
		کھ	
	k^hem	کھَمّ	'shovel'
	k^hilk^han	کِھلکھَن	'curved'
	/g/	گ	
		گ	

gula:bi	گُلاب	'rosy'
čurgu	چُرگ	'nineteen'
/q/	ق	
	ۆ	
qo:m	قوم	'nation'
caqpa	چَقپَ	
skrimoq	شکرِموق	'elbow'
/ŋ/	ن	
	۔	
ŋis	نِس	'two'
naŋs	نَسْ	'day after tomorrow
coŋ	چوّن	'onion'
/č/	چ	
	چ	

čo	چوٗ	'emperor'
topiči	توٗپچِ	'button'
pirič	پِرِچ	'saucer'
/č^{h}/	چھ	
	چھ	
č^{h}on	چھوٗن	'false'
braqč^{h}a	برٕقچھَ	'echo'
/ ǰ /	ج	
	جٕ	
ǰin	جِن	'giant'
sañǰoq	سَنجوٗق	'limestone'
/ ñ /	ں	
	ٕ	

ñima	سِمَ	'sun'
añčar	اَنْچَر	'pickle'
/ c /	چ	
	چ	
coqs	چوقْس	'like'
pa:ca	پاچَ	'king'
/c^{h}/	چھ	
	چھ	
c^{h}omo	چھوٚمو	'cyclone'
buc^{h}a	بُچھَ	'boy'
/ ṭ /	ت	
	ٹ / ٹ / ٹ	
ṭoce	ٹوٚچے	'orphan'

kiṭili	کِٹِلِ	'kettle'
kisṭ	کِسْٹ	'instalment'
/ṭʰ/	ٹھ	
	ٹھ	
ṭʰo	ٹھوٗ	'season'
byaṭʰaŋ	بیَٹھَن	'desert'
/ḍ/	ڈ	
	ڈ	
ḍika	ڈِکَ	'here'
ḍanḍal	ڈَنڈَل	'sieve'
/ṭ/	ٹ	
	ڈ/ڑ/ڑ	
taki	ٹَکِ	'bread'
pʰatkari	پھٹکَرِ	'alum'

o:t	اوٹ	'vote'
/t^h/	ٹھ	
	ٹھ	
t^hup	ٹھُپ	'dark'
ɣot^{h}uɬ	غوٹھُل	'testicle'
/d/	ڈ	
	ڈ	
dulba	ڈُلبَ	'march'
gunda	گُنڈ	'rogue fellow'
po:stka:rd	پوسٹ کارڈ	'postcard'
/n/	ن	
	ز / ن / ر	
nina	نِنَ	'then'

mana	مَنَ	'even'
mačen	مَچَن	'first wife'
/p/	پ	
	ڀ/ پ/ پ	
par	پَر	'metal cast'
tutpa	تُتْپَ	'smoke'
/pʰ/	پھ	
	پھ	
pʰrin	پھرِن	'message'
pʰalpʰal	پَھلپَھل	'open'
/m/	م	
	ه/ م	
mik	مِک	'eye'

nomo	نۄمو	'younger sister'
nam	نَم	'sky'
/f/	ف	
	ڤ	
fulaqs	فُلَقس	'ram
byafo	بیَفو	'cock'
/y/	اے	
	(ایـ) یـ	
yaŋ	یَن	'again'
hiya	ہِیَ	'itch'
/r/	ر	
	ڑ	
raŋ	رَن	'patni'

harip	ہَرِپ	'trumpet'
šakar	شَکَر	'cupboard'
/l/	ل	
	ل	
lama	لَمَ	'monk'
šala	شَلَ	'harrow'
šol	شوٗل	'plough'
/w/	و	
	و	
wace	وَچے	'fox'
pʰ aruwa	پَھرُوَ	'spade'
/s/	س	
	سہ	

sna	سَنَ	'before'
misaq	مِسَق	'people'
meqna:ṭis	مَقْنَاطِس	'magnet'
/z/	ز	
	ز	
zorba	زوْرَبَ	'sickle'
sozbu	سوْزبُ	'acceqted child'
/š/	ش	
	ش	
/šik/	شِک	'louse'
šiŋše:r	شِنْشیر	'Saturday'
ṭapṭa:qo:š	تَپْتَاقوش	'couch'
/ž/	ژ	
	ژ	

žoli	ژۆڵ	'broom'
zgožiŋ	زگۆژن	'hea
/ x /	خ	
	ـخـ	
xo	خۆ	'bitter'
xarxatu	خەرخەتۆ	'white ant'
marix	مەرخ	'mars'
/ ɣ /	غ	
	ـغـ/ـغ	
ɣom	غۆم	'hole'
staɣo	ستەغۆ	'gate'
/ h /	ھ	
	ـھـ	

hiliŋ		ہِلِن	'lace'
χa:his		خاہِش	'wish'

6.6.5. Clusters

—pḍ—	čupḍun	چُپڈُن	'seventeen'
—pn—	rgyapna	رگیپَنَ	'after'
—bg—	čobgeṭ	چوبگٹ	'eighteen'
—tm—	žuṭmar	ژُٹمَر	'ghee'
—ts—	patsa	پَٹسَ	'jute'
—kp—	ukpa	اُکپَ	'owl'
—gs—	ḍugsa	ڈُگسَ	'hermitage'
—qt—	ṭaqṭapo:š	تَقٹاپوش	'couch'
—ft—	afṭa	اَفٹَ	'week'
—sm—	ṭasma	ڈشمَن	'lace'

—šm—	ḏušman	تَسْمَ	'noise
—hm—	lehma	لَہْمَ	'right'
—mp—	brumpa	بْرُمْپَ	'small pox
—np—	bulonpa	بُلوْنْپَ	'debtor'
—ŋp—	ṯaŋpa laqpa	تَنْپَ لَقْپَ	'right hand'
—lk—	pa:lki	پالْکِ	'palanquin'
—rd—	kurḏo:s	کُردوس	'lock'
—kby—	šakbya	شَکبیَے	'doubt'
—sṯw—	skambosṯwa	سْکَمْبوْسْتوَ	'hay'
—msp—	skomspa	سْکوْمْسْپَ	'thirst'
—ŋsl—	ŋaŋsla	ڠَنْسْلَ	'day after tomorrow'
—rby—	sṯorbya	سْتوْربیَے	'disappear'
—gzby—	pʰralugzbya	پْھَرَگْگْزْبیَے	'try'

—mshl—	zgrumshlu	زگرمشلُ	'ballad'
—ŋzby—	hliŋzbya	ہلِنزبیے	'hunt'

6.6.6. Some Modifications

Some differences between the Urdu writing system and the Balti writing system suggested must be noted. In Urdu, the final vowels are always written long. Since the vowels in Balti are short phonemically in the final position, they are written with the symbols for the short vowel.

The symbol for /u/ in Urdu is not consistant. The same symbol is used for both /u/ and /vu/. In Balti is written with above the symbol for the preceding sound.

Urdu has no symbols for the vowels /e/ and /o/ and the suggested symbols for Balti are ے and و respectively.

The consonants c, c^h, ñ and ŋ have no symbols in the Urdu writing system and the suggested symbols are چ چھ ں and ن respectivelp. The symbol for /ŋ/ will have three different shapes in the initial position as the symbol for /p, b, t. t and n/.

NOTES

1. The very title of Pike's book suggests that one of the basic motivations for discovering phonemes of a language is to devise the script which is easy to learn and read for the native speakers. (Pike 1947).

2. Refer to Householder (1971 : 147–148) for further comments on this line of approach to phonology.

3. The phonemes *c* and c^h are present in Kashmiri also. and are used to represent these phonemes in Kashmiri (Handoo 1973 : 104).

4. These symbols represent alveolar stops and not retroflex stops as they are in Hindi. Since the retroflex stops are absent in Balti, these symbols are used to represent alveolar stops.

5. The same convention used for writing Urdu may be followed here when the symbols are written in combination with other symbols.

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ERRATA

Page	Line	For	Read
1	16	plece	place
3	21	these	those
	29	avaible	available
8	14	puff of	puff of air
9	20	ca	can
	29	grove	groove
12	27	producedt	produced
	34	Englis	English
14	1	vowels	vowels
	13	nasal	nasal passage
15	5	inka:rby	inka:rbya·
	6	imtha:n	imṭiha:n
17	18	ɕka:	ɕka·
18,19	22,24	middle	medium
21	26	ka·	kʌka·
	27	a·	bila·
	17	a:za:ḍi·	a:za:ði·
22	7	insert ş in between z and š	
26	23	ɣot^{h}ul	ʂot^{h}ul
	25	border	barber
27	23	thukpa	ṭ^{h}ukpa·
30	13	atece·	aṭece·
	17	c^{h}up^{h}inca·	č^{h}up^{h}inca·
36	1	PONETIC REARDER	PHONETIC READER
37	13	*ha:ṭ*	*ha:ṭ*^{h}
38,75	7,8	nima·	ñima·
39,76	11,22	nene·	ne:ne·
	13	drʌnmo·	ḍrʌnmo·
40	5	long	long
47	3	p^{h}i:ma·	p^{h}i:ŋma·
50	6	'satage'	'stage'
53	2	long	short
		[u:]	[u]

56	14	bilʌpʰun	bilʌfun
58,60,61	17,7,24,4	cʰʌdʰʌŋ	cʰʌɾʌŋ
60	4	tʰerbʌse·	tʰendʌse·
62	26	ʌpču·	ɣʌpču·
67	27	kucur	kucu:r
68	5	co	coŋ
69	14	ʰonmo·	čʰonmo·
	20	ʈʌŋ čʰhu·	ʈʌŋ čʰu·
72	2	čʰilmvq	čʰilmʌq
	11	soba·	so:ba·
77	26	ʈʈoʰs	ʈʈohs
81	29,30	x	ɤ
		ɣ	ɣ